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Inside Dope

By George F. Taubeneck

Wounded Soldiers Like Frozen Foods

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Meet the Mustache

Hero Connelly

More G.I. Mail

Wounded Soldiers Like Frozen Foods

At the U. S. Naval Air Station, Floyd Bennett Field, Brooklyn, planeloads of wounded G.I.'s are now arriving daily from points of embarkation abroad. This is their first sight of America . . . home!

And when you ask them what they enjoyed most about their trans-oceanic air voyage, what do they praise most? The food. And the food they've eaten on that trip has nearly all been of the quick-frozen variety.

Meat, potatoes, and vegetables are pre-cooked *on plates*, then stored in cartons and packed aboard the planes before the take-offs. When mealtime comes, the stewards remove the plates-of-food from the cartons, and heat them for 20 minutes (at 240 degrees).

The results are not only delightful to the palate, but delightful to the stewards, too. How this use of quick-frozen foods simplifies their mess problems!

You can bet that all of those G.I.'s will be boosters for frozen foods when they return to civilian life.

Raiding the Refrigerator

And at Army redistribution centers, thousands of returned overseas veterans are also rabid boosters for the good old electric refrigerator.

According to John L. Hennessy, special food consultant to the office of the Secretary of War, who has flown 28,000 miles this year on inspection tours of these fine establishments:

"Every redistribution station has a room about 15 feet square which houses a super-doper family type refrigerator. At 9 o'clock every evening this is filled with sliced meats, poultry if available, sliced cheese, and bottles of milk. On a sideboard there's sliced rye, whole wheat, and white bread, and condiments.

"When the boys return to the hotel from dates, movies, or dances, they raid the refrigerator, and make their own sandwiches with no one to bother them.

"It seems to be the most popular feature of the government's feeding program."

At these redistribution stations, the boys are housed in luxurious resort hotels. Some of the locations:

Miami Beach; Atlantic City; Lake Placid, N. Y.; Hot Springs, Ark.; Asheville, N. C.; and Santa Barbara, Calif.

The best is none too good!

Meet the Mustache

Frederick W. Binns of the Virginia Smelting Co. sends us a most intriguing picture of Earle V. Madison (the man with the mustache).

Before going into the army Mr. Madison was in charge of the refrigeration department at the Rhode Island Supply & Engineering Co., Providence, R. I.

A favorite among the jobbers and refrigeration men in New England, Earle and Arthur Wasserman are the only members of the New England Jobber Group to enter service.

After seeing a lot of action in the English Channel, where he was in

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Hood Heads Rema; All-Industry Show Planned For March

CHICAGO—F. J. Hood of Ansul Chemical Co. was elected president of the Refrigeration Equipment Manufacturers Association (Rema) at a meeting of the association's board of directors last week.

Tentative plans were made to hold the All-Industry Refrigeration & Air Conditioning Exhibition, which Rema sponsors, March 2 to 8, 1946, an option having been taken for those dates at the Stevens hotel in Chicago.

Other officers elected at the meeting included: H. F. Spoehrer, Sporlan Valve Co., vice president; E. M. Flannery, Bush Mfg. Co., secretary; and J. A. Strachan, The Weatherhead Co., treasurer.

New members of the board of directors to serve for a three-year term include B. J. Scholl, Brunner Mfg. Co.; Philip T. Miner, Tyler Fixture Corp.; W. H. Maxwell, Wolverine Tube Division; M. R. Oberholzer, L. H. Gilmer Co. Guy J. Henry, Henry Valve Co., was elected for a two-year term.

In addition, the following, having unexpired terms of office, continue on the board automatically: R. H. Luscombe, Penn Electric Switch Co.; R. O. White, Day & Night Mfg. Co. A. B. Schellenberg will serve as an advisory member of the board of directors.

G. E. Graff of Ranco, Inc., reporting on the activities of the jobbers relations committee, told the Rema directors that the campaign to get condensing unit manufacturers to provide a standard package of compressor replacement gaskets for resale had met with considerable success.

He also reported that the jobbers were anxious to have condensing unit manufacturers package and label replacement parts properly so that they could be more readily stocked and handled.

Paul Reed, reporting for the R.S.E.S. Relations committee, said that refrigeration service men were concerned with the problem of the accessibility of parts for repair on machines, and suggested that this problem were given consideration in meetings of engineering and technical groups.

The directors voted unanimously to direct that the retiring president, Mr. Schellenberg, send a letter to J. A. Krug, chairman of WPB, commending WPB on the manner in which materials have been allotted in an unbiased way to the refrigeration and air conditioning industry as well as to others.

Public Relations Program Launched

CHICAGO — An extensive public relations program has been launched on May 1 by the Refrigeration Equipment Manufacturers Association.

In announcing the program, which will be conducted by Theodore R. Sills & Co., R. Kennedy Hanson of Pittsburgh, executive secretary of REMA, revealed it will have two primary objectives at the outset:

1. To increase the public's knowledge of refrigeration and air conditioning equipment.

2. To assist manufacturers, jobbers, dealers, and service engineers to do a better selling job and be assured of the industry's share of the postwar American dollar.

To achieve these goals, the Sills organization, which besides its Chicago headquarters has offices in New York and Washington, will follow a five-point plan:

1. Gradually to increase the market for refrigeration and air condi-

(Concluded on Page 29, Column 1)

Refrigerator and Parts Supplies to Depend on Materials, War Needs

• • •

Commercial Cabinet Field Holding To Current Schedules

DETROIT—Despite the recent revocation of L-38, commercial refrigerator manufacturers say they do not anticipate any radical change in their present production schedules.

The available supply of refrigerated display cases, walk-ins, vegetable refrigerators, etc., will continue to fall considerably short of the actual demands, at least until such time as the pressure of war production is removed and the manpower situation eased, they believe.

Many months prior to the L-38 revocation, several types of commercial refrigerators were restored to production, manufacturers point out. Reach-in refrigerators and walk-in coolers, for example, were brought back into production in January of 1944.

But due to manpower limitations and the fact that a majority of plants in this industry were heavily engaged in war production, few manufacturers were able to take full advantage of these releases and in only a few instances were scheduled production requirements fully met.

Last October refrigerated display cases were restored to active production on a replacement basis through Direction 3 to L-38, which established a quota of 8,000 units for the entire industry.

Here again manpower restrictions and war production requirements prevented the majority of commercial refrigerator manufacturers from applying for quotas, and hampered those that did apply to the extent that manufacturers think it doubtful that this quota of 8,000 display cases will be met, unless the picture changes radically within the next few months.

The revocation of L-38 fully released a number of other commer-

(Concluded on Back Page, Column 1)

WPB Revokes Order On Water Heaters

WASHINGTON, D. C.—Revocation of the limitation order (L-185) that controlled production of water heaters was reported May 26 by WPB. This action is expected to result in a slight increase in the number of heaters available for civilian purchase this year, WPB officials said.

The order, as amended, controlled

(Concluded on Back Page, Column 1)

Locker Plant Building Restrictions Eased

WASHINGTON, D. C.—Restrictions on construction activities of many types, including locker plants, have been considerably eased by the recent action of WPB in amending Order L-41.

Frozen food locker plants, for example, can now be constructed up to the dollar value of $5,000, as compared with the previous $200 limit, without obtaining any authorization from WPB. Similar changes apply to other types of construction, with cost ceilings in general raised about five times over the former limit.

Liberalizations of restrictions on building maintenance and repairs as well as preliminary excavation work are also provided in the amended order.

Methods of Handling Unrated Orders Are Puzzling Parts Firms

DETROIT—The full effect of the revocation of Order L-38 (commercial refrigeration and air conditioning equipment and parts) and of other restrictive orders such as M-9-c (copper), remained considerable of a puzzle last week.

It remained a puzzle because there seemed to be no very clear answers to the following questions—

1. How much of the productive capacity of the industry will the military continue to take?

2. Are the materials and necessary components in plentiful supply, and if not, when will they be?

3. How will the manufacturers handle unrated orders?

The commercial refrigeration industry has been told that it must expect to continue to produce equipment at a high rate for the military needs of the war in the Pacific. The amount of capacity that will be left for civilian production has not been stated.

There is conflicting thinking on the matter of materials and components. The latest WPB statements indicate that steel won't be as plentiful as was thought two weeks ago. There are continuing high demands for copper, and the question arises as to how long the government will continue to subsidize importing and domestic low grade mining in order to keep the raw material in supply.

Manufacturers of electric motors, without which condensing unit production is of no avail, have sounded more hopeful notes recently, saying that they "eventually expect to keep up with all demands," but they don't say "when."

The manner in which manufacturers will fill unrated orders is pretty much a matter of individual policy. Some manufacturers are known to be putting all unrated orders on file to be filled in *numerical order*.

However, the fact remains that manufacturers must fill all rated orders first, and one producer says:

"The man who wants equipment or parts in a hurry will continue to get and use ratings."

(Concluded on Page 29, Column 3)

Crosley Distributors To Repair Hermetics

CINCINNATI—The Crosley Corp. has authorized a number of its larger distributors to repair, in their own service departments, Crosley sealed-in unit refrigerating systems in Crosley Shelvador refrigerators which had formerly been sent to Crosley headquarters in Cincinnati for repair, it has just been announced by Harold A. Newell, Crosley general service manager.

By servicing these refrigeration units in various local areas, both time and shipping expense are saved, to the definite advantage of the customer, Mr. Newell pointed out.

With the ultimate aim of permitting 100% field repair of Crosley sealed-in unit refrigerating systems, Mr. Newell said that the Modern Distributing Co., Crosley distributor in the Cincinnati area, was selected as the guinea-pig for a thorough field test of the plan.

Hand-made parts and hand-made equipment were installed in the Cincinnati distributor's service de-

(Concluded on Page 29, Column 2)

Household Box Makers Among Most Active; Stockpiling Seen

WASHINGTON, D. C.—"Only time will tell" apparently is the answer to the question "when will household mechanicals be available for sale generally to civilians."

The official government talk is that refrigerators will probably not be generally available until way late in the year, and possibly not until the early part of 1946. Some major producers, however, have expressed off-the-record confidence that volume production and distribution might be reached early in the fall.

From the Washington front, there was a combination of good and bad news on the reconversion of the refrigerator industry. The good news was that the industry is second in the amount of authorizations for preference ratings for preliminary reconversion (bottleneck items) construction and equipment.

The bad news is that the failure of the Army to make "any sizable cutbacks" in its requirements of carbon steel may result in further delays in the resumption of civilian production.

The agency said that absence of data as to continued needs of steel for military purposes "has prevented an accurate appraisal of the amount of carbon steel to be available for civilian needs" during the third quarter. A WPB spokesman said that as a result, reconversion among industries demanding large quantities of steel for new production might be "delayed for a short time."

There was still no clear-cut picture of how the first refrigerators to be made would be distributed. It was believed by some that WPB's announced intention of stockpiling the early production for "highly essential needs only," might also give the manufacturers a chance to stockpile in a way that would later permit them to ship distributors on an equitable basis, thus forestalling charges of favoritism or unfair treatment.

Admiral Sets October For First Deliveries

CHICAGO—Not more than 90-120 days after July 1 will be required by Admiral Corp., Chicago, to begin turning out electric refrigerators.

This was the time given recently by L. H. D. Baker, vice president in charge of Admiral's appliance division. Mr. Baker expressed confidence that Admiral will begin delivery of new units by late October, and possibly earlier, under WPB's July "go" signal for the refrigerator industry. He said that Admiral already has applied to the WPB for its manufac-

(Concluded on Page 4, Column 4)

Pricing and Dealers

What is the significance of the OPA pricing policy on reconversion hard goods, such as refrigerators and other appliances?

Does the cost absorption principle mean that the "specialty" type of distributor and dealer will be forced to operate at margins so small that he won't be able to do business?

A discussion of this problem by two industry leaders eminently qualified to speak on it will be found on pages 6-7 of this issue.

POWER TO SPARE

All "M&E" Condensing Units have been redesigned with extra capacities to meet the heavy and widened demands of post-war use. Their basic fine quality, proven in the crucible of twenty years use, remains unchanged.

1/4 TO 5 H.P. INCLUSIVE

While War Production has utilized our manufacturing facilities, engineering and product development has been continuous. Final tests are being completed, production planning is in process, and manufacturing will start as soon as possible.

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ARMY E NAVY

M&E EST. 1866

M&E REFRIGERATION DIVISION OF

LEHIGH FOUNDRIES, Inc.

EASTON, PA.

PLANT Lancaster, Pa.

I say "SHUT THE DOOR" and she slugs me!

I see this G.I. and his bride looking inside the ordinary refrigerator we use for comparing with the Crosley Shelvador*. I approach to do my sure-fire selling act.

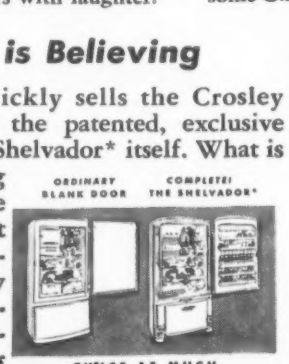
1. After greetings I open up with, "Notice, Madam, how these two refrigerators, each with all modern improvements, look exactly alike when I *shut the door!*" At this she gives me a stunned look and a left-hand slap in the jaw! The G.I. roars with laughter.

2. "Excuse it, Mister," he says. My wife is French. You said 'Shut the door' which sounds like 'je t'adore'—and that's French for 'I love you'. Hold it a minute while I put her wise." So he gives her some G.I. French and I rub my jaw.

3. Then she becomes very apologetic! So I open up the ordinary refrigerator door—point to its blank inside. Then I flash the Shelvador*. Her eyes open wide. I say "Shelvador*!" and let the two open refrigerator doors do the talking. That Shelvador* says "Twice as much food to the front" in any language. That sale was a cinch — even better . . .

SEEING *is Believing*

NOTHING so quickly sells the Crosley Refrigerator with the patented, exclusive Shelvador* as the Shelvador* itself. What is more convincing than the simple demonstration that Crosley refrigerators offer every modern improvement in home refrigeration *plus* twice as much front row storage space. Remember, too — every Crosley household product gives your customers exclusive features they can see, feel or hear—features that sell for you because you can *demonstrate* them!



4. . . . the little French bride's mother-in-law drops in later. She says Marie sold her on the Shelvador* just by opening the door. Two sales from one demonstration.

Well, that's the way with Crosley—always some exclusive, patented feature that anybody can *see*, or *feel*, or *hear!* — features that you can demonstrate in any language including the French. *Reg. U.S. Pat. Off.

CROSLEY

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Radios : Radio-Phonographs : FM : Television : Short Wave : Electronics : Radar : Refrigerators : Home Freezers : Laundry Equipment : Ranges : Kitchen Sinks and Cabinets : The Crosley Car : Home of WLW, "The Nation's Station"

Locker Assn. Predicts 5,000 New Plants In 5 Years After V-J Day

DES MOINES, Iowa—More than 5,000 new frozen food locker plants will be constructed within five years after V-J Day.

This prediction, made by the National Frozen Food Locker Association, representing the industry which operates more than 2,000,000 individual storage units serving 25% of America's farm families, are based on anticipated improved and broadened postwar locker plant services.

From a modest 1,000 locker plants in 1938, the total has now risen to more than 6,000. Association figures show that more than 80% are located in rural areas, 75% operating in towns with populations of 5,000 or less.

Farmers, faced with few meat rationing restrictions during the war, have discovered the flexibility of locker plant operations, which include slaughtering, chilling, cutting, grinding, curing, smoking, lard rendering, packaging, labeling, quick-freezing and storing of meats and blanching, packaging, quick-freezing and storing of fruits and vegetables.

In planning for increased postwar use of locker plant facilities in large cities, the association lists among advantages for urban families the opportunity for buying at low prices large quantities of top quality meat and other fresh foods that can be stored in lockers ready for use during every season of the year.

Available, also, to busy metropolitan families will be the developing locker plant feature of supplying ready-for-the-table delicacies such as chili, baked beans, chop suey, pies, cakes and pastries, soups, and other prepared food items.

Tomorrow's urban locker plant may be a combination retail store, commercial frozen food distributor and processing plant, the association believes. In addition, locker plant operators plan to distribute and service home storage units. Most widely accepted of these units, they believe, will be the models designed for storage only of foods already frozen.

Richard Law To Head Mills Advertising

CHICAGO—Richard K. Law, formerly advertising director for American Hospital Supply Corp., the country's largest distributor of equipment and supplies for hospitals, has been appointed advertising manager of Mills Industries, Inc., announces Gordon B. Mills, vice president in charge of sales.

Mr. Law is a graduate of the University of Illinois, 1932, and a member of Phi Beta Kappa. In his senior year he edited the *Illio*, the country's largest school annual. After a year of free lance writing, he joined the sales staff of Cuneo Press, Chicago, and in 1935 he became advertising manager for the National Mineral Co., manufacturer of equipment for taverns, restaurants, and beauty shops. In the next seven years the company became the largest producer in the field. In 1942 he joined the hospital supply company.

He has conducted training courses for the Chicago Federated Advertising Club and has written numerous articles on display, sales promotion, and public relations.

Postwar Appliances Seen As Boon To Housewives

PHILADELPHIA — Electrical appliances expected to come into general use after the war should prove a boon for the average housewife, who spends nine and a half years of her life cooking meals and who washes 26,280 dishes a year, and her husband who helps, the Home Planners' Institute of Philadelphia was told recently by Elizabeth Watt, research assistant of Westinghouse Electric Corp.'s better homes department.

"An electric dishwasher in 10 minutes will wash, rinse, and dry 57 dishes and glasses, 45 pieces of silver and pots and pans, all for less than one cent a meal, including the cost of soap," she declared.

"Fully automatic electric ranges will make it possible for the housewife to put dinner in the oven, set the controls, and dash off to her bridge club, returning to find the meal practically ready to serve," continued Mrs. Watt. "And electricity will do scores of other jobs automatically to take the drudgery out of housework."

Such items as the Westinghouse dust precipitator, automatic washer, electric clothes driers, fluorescent lights, and "black light" for bringing out color schemes in the home have been fully developed and probably will be on the market soon after the war, according to Mrs. Watt.

"It seems certain that many Americans will demand these modern appliances," she said. "But in order to enjoy them properly the home owner must be sure that his house has an adequate wiring system. For those of you who plan to build or modernize after the war, it is important that you plan for enough circuits and outlets to accommodate not only your present appliances, but those you expect to purchase in the future."

Graydon Electric Opens Store In Toledo

TOLEDO — Graydon Electric Co., selling and servicing a complete line of Crosley, General Electric, Philco, and Westinghouse appliances, has opened its store at 2310 Monroe St. here.

The store will feature air conditioning units, refrigerators, ranges, washing machines, ironers, radios, clocks, and fans, according to the owners, Donald H. Karg and Grayden Knox. A model kitchen is part of the display setup.

Also handled are popular and classical records and an extensive track layout for Lionel electric trains in motion.

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POSITIVE • QUICK • CLEAN LEAK DETECTION

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FRIGIDAIRE DEALER
OPERATING GUIDE
SERVICE SECTION
CHAPTER I
CHAPTER II
CHAPTER III
CHAPTER IV
THE FRIGIDAIRE SERVICE BUSINESS AND ITS PROFIT OPPORTUNITIES
. . . FACILITIES REQUIRED . . . SELECTING, TRAINING AND COMPENSAT-
ING SERVICE PERSONNEL . . . ESTIMATING PARTS REQUIREMENTS AND
MAINTAINING PROPER INVENTORY . . . SELLING SERVICE . . . HANDLING
SERVICE CALLS . . . GENERAL SERVICE POLICIES . . . APPLIANCE SERVICE
. . . COMMERCIAL AND AIR CONDITIONING SERVICE POLICIES
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"It's the greatest thing we've ever seen!"

"Most outstanding piece of helpful literature ever presented to the Service Dealer Organization; another 'Frigidaire First'."

"An excellent Guide. Well gotten up, shows a lot of thought and consideration of dealer and district problems. Will be a real help."

"Complete in every detail. A fine piece of material to place in the hands of both old and new dealers."

Comments like these show how enthusiastically Frigidaire Service people in the field are hailing the unique Service Section of Frigidaire's new Dealer Operating Guide.

There's good reason for their enthusiasm. For this book offers practical help and authentic information on every phase of the service business.

An entire chapter diagrams and explains service department arrangements . . . provides detailed information on equipment and tools . . .

Another chapter shows how to select and train service personnel . . . compares the advantages of various serviceman-compensation plans . . .

Still another chapter shows how to set up and operate a record system on service parts . . . gives useful tips on ordering parts . . .

Two invaluable chapters point out special opportunities for selling service . . . : show how service calls can lead to future equipment sales . . . give reliable advice on establishing—and collecting—service charges . . .

Yes, whether a Frigidaire Dealer wants to establish a service department, or improve his present operations—this book will give him valuable assistance! It's designed to help *any* Frigidaire Servicing Dealer, whether the dealer is his own service man or maintains a complete service organization. It's planned for thoughtful study—yet the answer to a sudden service problem may be located within a minute.

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This exceptional Service Guide condenses into one practical, usable volume the service "know how" of hundreds of Frigidaire Dealers . . . the fruit of more than 25 years of service experience . . . the vast technical knowledge of the entire Frigidaire Service Organization. Another exclusive advantage for the *Frigidaire* Dealer, it's one more reason why Frigidaire Dealers will continue to enjoy the kind of service leadership that pays off in . . . *Sales Leadership!*

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Division of
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Peacetime builders of
REFRIGERATORS • RANGES • WATER HEATERS
HOME FREEZERS • ICE CREAM CABINETS
COMMERCIAL REFRIGERATION • AIR CONDITIONERS
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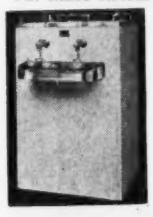
Cafeteria Type
WATER COOLERS
For MESS HALLS • HOSPITALS • PLANTS

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2 Distributors Named For Harder Freezers In Albany, South Bend

COBLESKILL, N. Y. — Harder Refrigeration Corp. has announced the appointment of the Albany Hardware & Iron Co. and Cloud Brothers as distributors for the complete Harderfreez line of farm and home freezers.

The Albany Hardware & Iron Co., whose territory includes eastern New York state, is making plans now for the appointment of dealers in that area.

Paul Cloud, South Bend, Ind., is making the arrangements for the dealers in his area. The Cloud Brothers territory includes northern Indiana and southern Michigan.

Crosley Indicates It Will Produce Cars

CINCINNATI—Definite indications that Crosley Corp. plans resumption of automobile production are contained in the announcement that Powel Crosley, president, and Ray C. Cosgrove, vice president in charge of manufacturing, had joined other auto manufacturers in proposing that WPB permit production of 200,000 cars this year and 400,000 in the first quarter of 1946.

The Crosley car, a small, low-priced automobile powered with a two-cylinder motor, was first introduced in the spring of 1939. Production continued until stopped by the war.

Admiral Sets--

(Concluded from Page 1, Column 5)

turing priority and its third and fourth period quotas.

"Our plans have been in the making for some time and are pretty well laid," Mr. Baker declared. "We definitely will start with a postwar, not a prewar model, one that will remain an integral part of our peacetime line. As far as re-tooling and the installation of new machinery are concerned, we believe we could start immediately without impeding the plant's present output of war materials. All reconversion steps will have the full approval of WPB.

"Allocation and distribution of the refrigerators will, of course, depend, he said, on the priority system to be established by the WPB. He added that both distributors and dealers have been cautioned against making rash delivery promises to home consumers.

Admiral has capacity to make 300,000 refrigerators in its first full peacetime year, according to Mr. Baker. It will make a standard model, a new-type deluxe conventional, and the "Dual-Temp."

Admiral's advent into the refrigerator field results from its purchase of the Stewart Warner appliance division in February of 1944. Besides refrigerators, the acquisition embraced home freezers and electric ranges.

Unrestricted Production Of Radio Parts, Tubes Predicted for This Fall

WASHINGTON, D. C.—Relaxation of the tight restrictions on radio manufacture can be expected in July, when WPB will amend L-265 to allow unrestricted production of radio components, including tubes, and limited manufacture of complete sets for such civilian uses as police and transportation, according to unconfirmed reports circulating here.

If this revision is put into effect, it is probable that the spot authorization order PR-25 will likewise be changed to permit manufacture of the same items.

Officially, however, WPB still declares that home radio receivers will not reach the market until early next year at the earliest.

Recently Louis J. Chatten, WPB radio chief, had announced that L-265 would probably be changed when cutbacks on military orders for radio equipment amount to 10%, and that civilian radio sets would be given the "go-ahead" when cutbacks hit 25%.

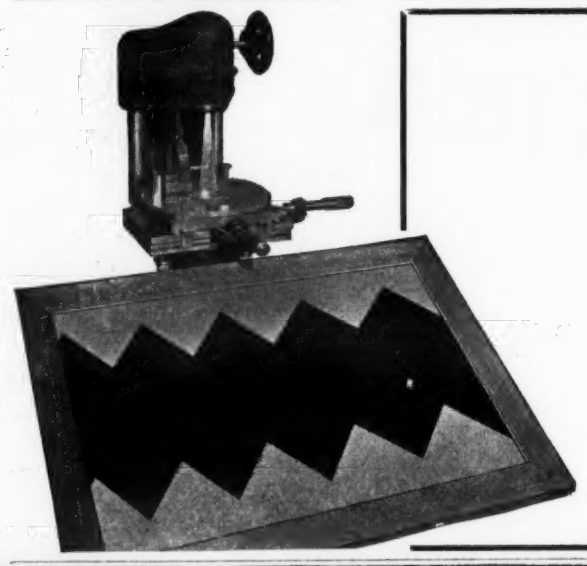
The rumored plan to drop all restrictions on radio components brought protests from one manufacturer, Samuel J. Novick, president of Electronic Corp. of America, New York City.

"Prerequisite to the manufacture of sets are the manufacturing and obtaining of components so there is a rush to order parts," Mr. Novick declared in a letter to the Radio Manufacturers Association.

"Demand for components seems limited only by the overstimulated imaginations of inexperienced manufacturers, who has been nourished on an unlimited wartime market. . . . If anarchy prevails in the ordering of sets, chaos will surely prevail in retail sales," he warned.

He asks that RMA survey parts and sets manufacturers to determine their capacity and the amount of parts on order so that it can develop a plan for organizing production and deliveries that will make components available in balanced proportions.

The RMA, which will give most of its attention to reconversion problems when it holds its annual meeting, limited to a few of its own officials, at the Stevens hotel in Chicago June 13 and 14, has already announced that it expects to have radio repair parts and tubes available for civilians by this fall, and possibly a few sets, though the latter cannot be expected in any quantity until next spring.



100 TIMES ENLARGED

In the production of Ranco Commercial and Domestic Refrigeration Controls certain parts are inspected by this instrument which projects a silhouette of the part 100 times enlarged. This is indicative of the extreme care used in the manufacture of Ranco controls . . . it is your assurance that your installation of a Ranco Refrigeration Control will bring no regrets . . . that it is a precision instrument; alert, responsive, accurate.

And, in addition, Ranco Controls are attractively designed and constructed. You can be proud, as well as confident, when you install Ranco.

ASK YOUR RANCO JOBBER

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TRUCK
Immediate Delivery
Rubber Tired Wheels

NOW! "Handee Andy" all purpose tube steel 500 lb. cap. Full size, first quality, not a wartime makeshift. Light wt. very easy to handle. Ht. 44" .14" wide at nose. Curved cross pieces. The only truck we sell. Specializing permits a better truck, and more of them! By mail only at present time. Fully guaranteed. F.O.B. 1% 10 days. Unrated firms cash with order. AA5 will assist immediate delivery. Clip this.
9.95 Lots of 12
Lots 3, $11.95
Single, $12.95
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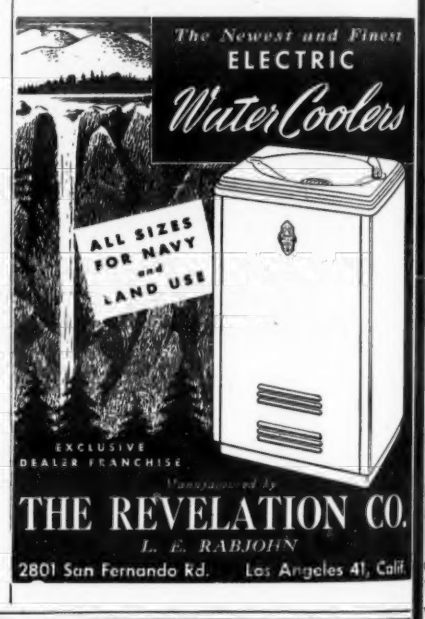

Manufactured by
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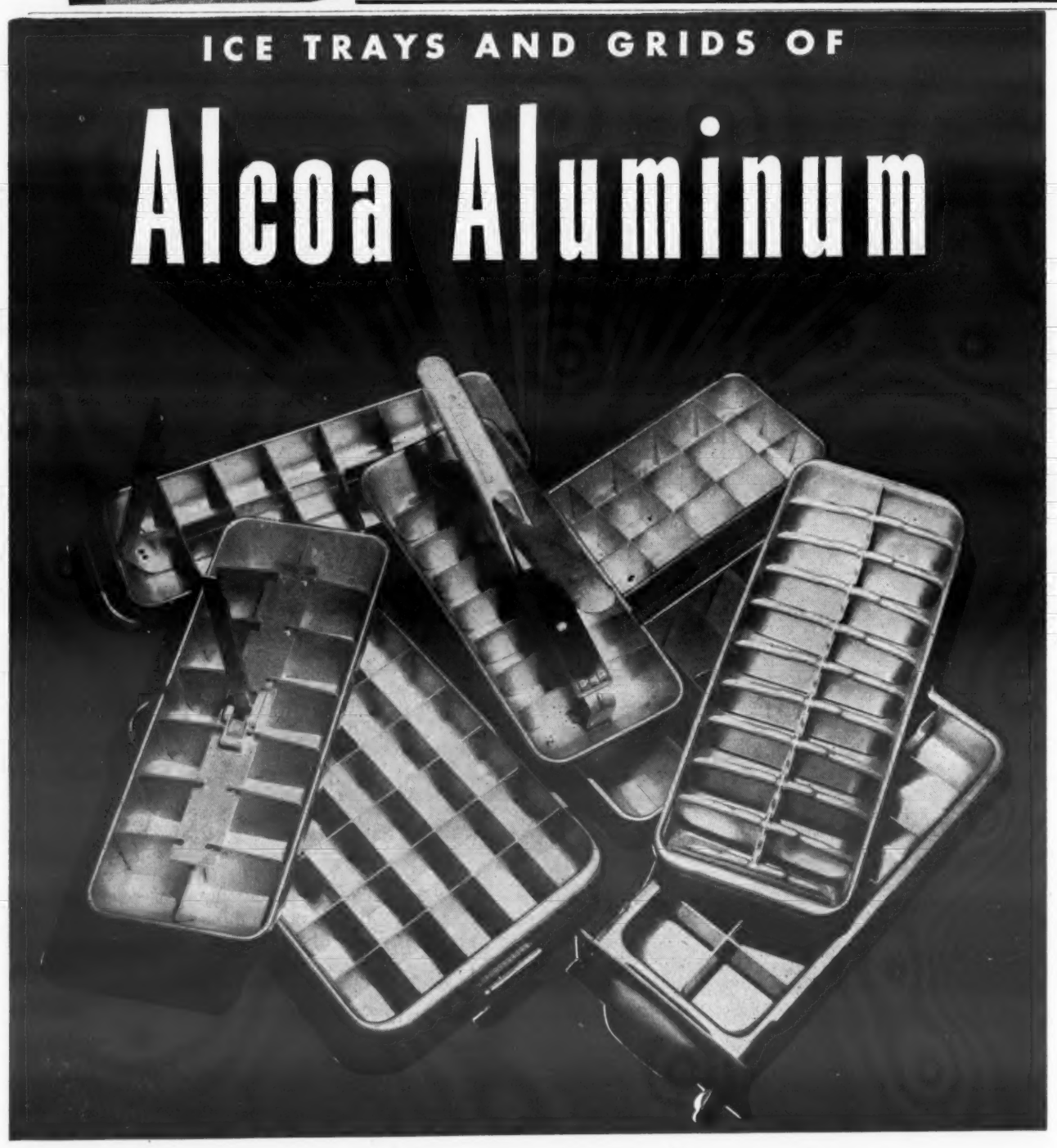
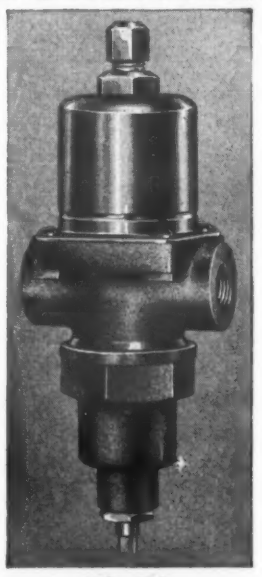
2801 San Fernando Rd. Los Angeles 41, Calif.

ICE TRAYS AND GRIDS OF
Alcoa Aluminum

good salesmen because they have that CLEAN look

Aluminum ice cube trays and grids look clean because they are. Housewives find it easy to keep "friendly-to-food" aluminum clean and sanitary. Put to work, they help speed freezing of ice cubes and desserts. Aluminum carries off heat in a hurry. ALUMINUM COMPANY OF AMERICA, 1975 Gulf Building, Pittsburgh 19, Penna.

ALCOA FIRST IN ALUMINUM

AMINCO
WATER REGULATING VALVE
Quiet • No Chatter • Practically friction-free • Maximum flow with minimum head pressure differential •

Double Bellows Seal • Removable Body Seat • For all refrigerants —except ammonia • Standard connections 3/8" x 3/8" F.P.T. • Pressure Controlled •
No. 614
Aminco No. 614 water valve regulates the amount of water passing through water-cooled condensers. . . .
This valve is helping to keep systems in tip-top condition and because of its close control action it provides insurance of longer life for water-cooled condensers.
Sold, as always, through jobbing channels, it is an invaluable aid to the service-man concerned with keeping installations operating at full efficiency.
For more details see Bulletin No. 15.
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William H. Cody, 2nd Unit, 10th Floor, Santa Fe Bldg., Dallas, Texas
Export: Borg-Warner International Corp., 310 S. Michigan Ave., Chicago, Ill.

Inside Dope

By George F. Taubeneck

EARLE V. MADISON
The sergeant hails from the refrigeration department of Rhode Island Supply & Engineering Co., Providence.

* * *

(Concluded from Page 1, Column 1)

transport work, Earle became an expediter and was chasing trains around through Belgium and Germany.

Hero Connelly

Another industry G.I. we must tell you about is Cpl. Kenneth A. Connelly, Jr., son of our old friend Kenneth A. Connelly, Sr., who is Seattle distributor for Norge, Majestic radios, Simplex ironers, and other products.

He has a brilliant record.

General Sales Manager Frank C. Porter of the F. B. Connelly Co. sends us the following dope on Cpl. Connelly:

He has been serving as Chaplain's Assistant with the 333rd Infantry of the 84th Division in the European theatre of war during 1944 and 1945.

Was with the Ninth Army at the time of the first attacks on the German homeland. His unit was particularly engaged in the capture of Geilenkirchen, Germany, in November of last year. Was awarded *Combat Infantryman Badge* at that time.

Previously was with army during movement through France, Belgium, and Holland.

At time of the German counter-offensive "break-through" in December, 1944, the 84th Division with which he serves was transferred to the First Army. Press reports and communiques disclosed that this unit did outstanding service in repelling the enemy in the Ardennes Forest; operating at the northern side of the so-called "Belgian bulge." Casualties were appreciable and fighting was tough.

For several weeks the 84th Division remained with the First Army. It returned to the command of the Ninth Army after the German counter-offensive had been liquidated.

"In recognition of conspicuously meritorious and outstanding performance of Military duty, against the enemy in Germany and Belgium," Cpl. Connelly was given a *Citation with Certificate of Merit* by the Commanding General of his Division.

Cpl. Connelly has also been recommended for Award of the *Bronze Star Medal,* according to information just received, with his Regimental Colonel's report that "while under enemy observation and fire, and while working with his men, his performance was highly meritorious, with unusual value to the Regiment, in keeping with the finest military traditions, and reflected much credit upon himself, our God, and our country."

Cpl. Connelly has served with the Infantry forces since he entered military service from Seattle, Wash., in 1942. He is a graduate of Garfield High School and the University of Washington, where he received Magna Cum Laude scholastic honors.

More G.I. Mail

N.C.B.D. 1058
c/o Fleet Post Office
San Francisco, Calif.

Editor:

Your article "Are the G.I.'s overlooked?" was read with a great deal of interest; but there are some of us that are not worried about being overlooked.

I am 38 years of age, spent some 13 years in the commercial end of the industry, and I know there is always a place open even in times of depression.

The only worry we have is *if and when* we can return, and have a chance to dig in and resume a normal life. A little bit of work will take care of everything.

Refrigeration on top of the world (near Point Barrow, Alaska) does not present any great problem, for the yearly mean temperature is so low that all that is necessary is to open the door a little wider.

Eskimos use refrigeration by nature, and the cellars are cold storage vaults the year around.

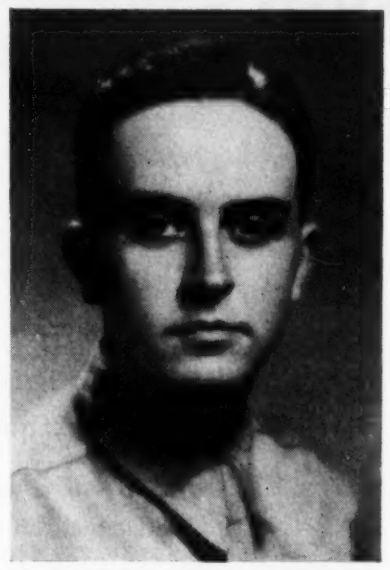
Common practice is to dip meat in the Arctic ocean, let it freeze, repeat several times, and you have the fall kill all ready for storage. Sanitation is of no importance.

You are having spring in Detroit, and it is also spring in the Arctic. However, the temperature still gets as low as 0° F. The good old sun does not set until around 11:30 P.M. and we will soon have 24 hours of sunshine each day instead of 24 hours of darkness as in the dead of winter. Snow and ice is still plentiful.

I have greatly appreciated receiving the NEWS in order to keep up with the industry. What commercial models will be after the war is what I am interested in. Many new changes, no doubt, will be made.

E. N. NASH, Y 1/C

A Brilliant Record



KENNETH A. CONNELLY, JR. Son of Norge's Seattle distributor, he has been awarded medals and citations in the European theater.

NOTICE!

IMMEDIATE DELIVERY AT NEW LOW PRICES

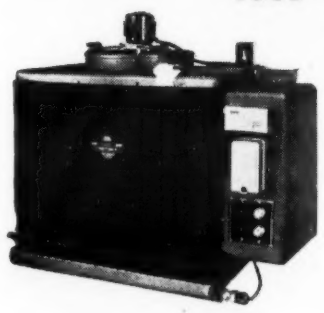
JOBBERS and DEALERS!
Handle the money-making AMCOIL line in your area. Write today for details of our attractive line of cooling units—a few localities are still open to qualified jobbers.

A RARE COMBINATION
The highest quality at Lowest prices
Improved manufacturing methods and automatic machinery have enabled us to reduce prices on all Amcoil units.

Prices effective as of April 1, 1945 and supersede all previous lists. They are subject to change without notice.

COMPARE OUR QUALITY—DESIGN—NEW INVENTIONS—*IMMEDIATE DELIVERY*

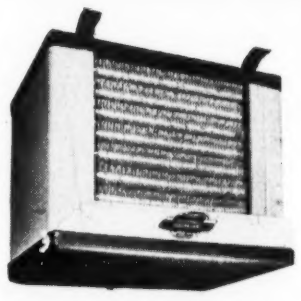
FOOD CONDITIONER COOLING UNIT



Automatically preserves foods without dehydration. Temperatures from 36° to 40° F. For reach-in and walk-in coolers.

MODEL	BTU/HR 15° MTD	LIST PRICE
RIF 38	4,600	$270.00
RIF 43	5,500	283.00
OCF 56	6,500	290.00
OCF 82	9,200	325.00
OCF 126	13,000	550.00
OCF 166	19,500	590.00
FC 50	7,500	333.00
FC 80	11,300	378.00
FC 130	17,000	601.00
FC 160	22,600	641.00

ALSERVICE OPEN FACE UNIT



For efficient cooling and serves as a general utility unit in preserving foods where a forced draft cooling unit is required. Streamlined, in attractive grey and black colors, it produces temperatures down to 36° F.

MODEL	BTU/HR 15° MTD	LIST PRICE
OC 44	4,000	$120.00
OC 48	5,100	148.00
OC 58	7,500	161.00
OC 84	11,000	210.00
OC 128	15,500	322.00
OC 168	23,000	370.00

ZERO-BREEZE LOW TEMP UNIT

A low temperature unit equipped with automatic electric defrost . . . wall-mounted model . . . produces temperatures from +20° F. to −20° F. . . . defrosts automatically on each off-cycle of condensing unit.

MODEL	BTU/HR 10° MTD	LIST PRICE
RZB 60	3,900	$325.00
ZB 120	7,250	425.00
ZB 150	11,000	615.00
ZB 180	14,500	655.00

ALSERVICE REACH-IN PANEL UNIT

A compact cooling unit for all utility refrigeration applications. Designed to meet a growing demand for medium capacity units to balance condensing units of ¼, ⅓, ½ or ¾ HP. Especially adapted for reach-in and small walk-in boxes.

MODEL	BTU/HR 15° MTD	LIST PRICE
RI 15	2,000	$ 94.00
RI 25	2,250	99.00
RI 30	3,000	114.00
RI 40	5,250	149.00
RI 45	6,150	169.00

ALSERVICE DOWN-DRAFT UNIT

An efficient, down-draft cooling unit employing new ideas in refrigeration. . . . May be converted to controlled humidity Food Conditioner by adding the control assembly package.

MODEL	BTU/HR 15° MTD	LIST PRICE
UC 63	8,000	$211.00
UC 100	12,500	261.00
UC 123	17,500	477.00
UC 200	24,000	517.00

Bigger Profits for you and Greater Profits for the user with the Amcoil Food Conditioner. Now available in three different models.

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Richard Barthelmess Sales Co., 1711 Challen Ave., Jacksonville, Fla.
F. M. Eversden & Associates, 220 So. 16th St., Philadelphia 2, Pa.
Jordy Engineering Co., Inc., 813 Howard Ave., New Orleans 13, La.
P. J. Burrill, 800 North Clark St., Chicago, Ill.
Robbins-Greenwood Co., 3104 Main St., Houston 4, Texas
The Mac Silver Co., 114 No. Sweetzer Ave., Los Angeles 36, Calif.

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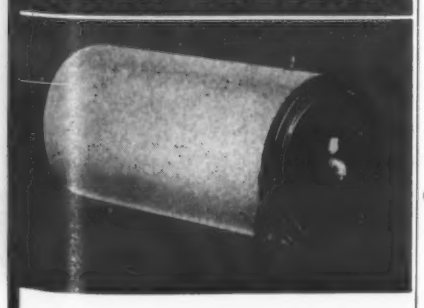
NORMAL SUCTION PROCESS WATER COOLERS



6 to 25 gallon capacities.

Compact in design...can be mounted on floors, walls or ceilings.

Suitable for drinking water bubbler service, cafeteria or restaurant glass filler service.

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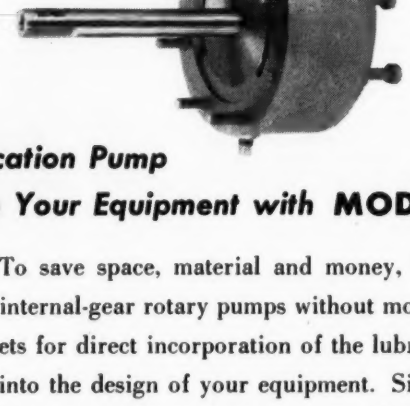

***Build the Lubrication Pump into Your Equipment with* MODEL CS**

To save space, material and money, Tuthill offers internal-gear rotary pumps without mounting brackets for direct incorporation of the lubrication pump into the design of your equipment. Sizes from 1 to 50 g.p.m. and pressures up to 100 p.s.i. Other models also available to meet your requirements for this service. Write for Tuthill Model S bulletin.

TUTHILL PUMPS

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OPA Pricing Policy on Civilian Hard Goods

Principle of Cost Absorption Works Many Injustices, Blood Points Out

CHICAGO — Charging that the OPA's announced policy on pricing of reconversion consumer goods is making some manufacturers think of abandoning plans for production, and that it can force wholesalers and retailers to operate at a loss, Howard E. Blood, president of Norge division of Borg-Warner, called for action to create a policy that would be "fair and equitable" to all.

"All that is needed is for Congress to tell OPA clearly and unmistakably that their job is simply to *prevent prices for scarce essential goods* which *permit profit margins greater than those prevailing just before the War,*" Mr. Blood declared in addressing the Chicago Reconversion Conference.

In the price phase of reconversion there is still the utmost confusion and widespread fear of profit squeezing, Norge's president declared.

"The OPA in advocating to the Banking and Currency Committees of Congress the unchanged reenactment of the Price Control Law, has recently said—

" 'Cost absorption is the central principal of price control.'

"Now *WHO* will absorb *WHAT?*

"This talk of cost absorption can only mean one thing—that profits on reconversion goods will be squeezed to less than prewar levels. It can only mean that the investors whose money is needed in facilities for production and distribution must *absorb* their disappointment at being denied even a prewar rate of return on their investment. And yet OPA expects all such people to put their money into production and distribution at a rate which will produce an abundance of goods and jobs.

"I haven't heard manufacturers even ask for prices high enough to cover all the costs incident to high overheads during a time of limited and small production. But OPA is demanding partial or complete absorption of basic cost increases which industry will have no way of avoiding during the transition period.

SCARES OFF SOME PRODUCERS

"A nationally prominent manufacturer said in Washington last week that he has spent much of his time recently in CED work in the smaller towns where many manufacturers have told him they clearly see opportunities for making and selling goods and employing many people, but they do not plan to do it because they fear OPA will not let them make a profit.

"You must admit this is bad. What is to blame for this other than OPA's constant promise of 1942 prices and their interminable delays in handling hardship cases even to a point of relieving actual loss."

We all want to hold the line against inflation, Mr. Blood stated. It is a question of where the line can really be held.

"We will have to depend on Congress to order OPA to select a tenable and practical line to hold against inflation. The principle of cost absorption as applied by OPA is impractical and untenable.

"You may say OPA is already modifying its policy of cost absorption as evidenced by its recent bulletin on Reconversion Pricing. In this bulletin they indicate a willingness to adjust prices upward for reconverting industries for two factors, and I quote—

" 'First, lawful increases in materials and parts prices and second,—lawful increases up to this time in basic wage rate schedules of factory workers."

" 'To the 1941 costs so adjusted, we will add in place of the 1941 profit margins the more nearly representative peacetime margin received in 1936-1939.' " (Both before tax, of course.)

MANY FACTORS IGNORED

"While it remains to be seen how factually any adjustments will be made on these factors, it is obvious that increases in salaries of technical, clerical, executive, and sales personnel are ignored, and of course, the higher taxes that the management must continue to pay before paying the forgotten man, the stockholder, are completely ignored.

"To the fact that any such adjustment makes no provision for the higher overhead costs during the period of small or limited production, I take no exception, although many small manufacturers may find it hard to live through that period. But I see no reason for not recognizing the added costs of lawful increases in salaries as well as factory wages and believe the adjustments should cover all factory wages and all material whether productive or non-productive.

That they have taken only a step and have yet failed to establish a line that can be safely held is shown by their policy on distribution margins, the speaker declared.

"The bulletin says—

" 'Later I expect to make a statement concerning the standards that will govern the changes in retail prices based upon a change in manufacturers' price. We will consult with the distribution trades concerning the best way of carrying out our general obligation to minimize retail price increases whenever manufacturers price increases can be absorbed in whole or in part by wholesalers and retailers.'

"Not yet has OPA made it a practice to 'consult' with trades and industries. Their intent in this instance is made perfectly clear in their statements made to the Congressional Banking and Currency Committees in March, 1945. They said, referring to wholesale and retail prices.

THE FORMULA ON DISTRIBUTION

" 'If, after absorption of a supplier's price increase the trade's *margin* still exceeds its *expense ratio* no increase in ceiling price is made.

" 'If, however, such absorption would reduce the margin on the product below the expense rate, the ceiling price of the product is increased.'

"They define—

" 'The trade's *margin* is the difference between the cost of goods to the trade and the selling price.

" '*Expense rate* is total operating expense (excluding cost of goods) stated as a percentage of dollar sales volume.'

"They give an example—

" 'The trade's typical expense rate is 25%. The typical margin on a particular product is 30%. No increase in the trade's ceiling is granted unless the increase in sup-

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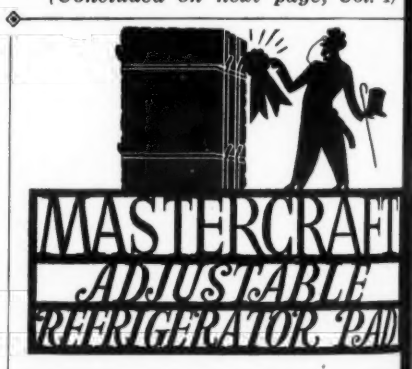

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Pad is adjustable to all makes and sizes of refrigerator cabinets; thoroughly protects finish of cabinet from scratches and mars during moving; easily and quickly put on or off; sturdy, lasting construction; easily pays for itself in a short time. Price $11.75 each.

Attractive lettering of your name on pad at $2.00 each extra.

For carrying your refrigerator more safely and easily, use the Mastercraft Adjustable Carrying Harness which is a separate unit from the pad and priced at $8.50 each.

Write for complete folder and prices on pads for refrigerators, washers, ironers, ranges, radios; also furniture pads and protective covers. . . . All prices subject to change without notice.

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Incorporated 1921

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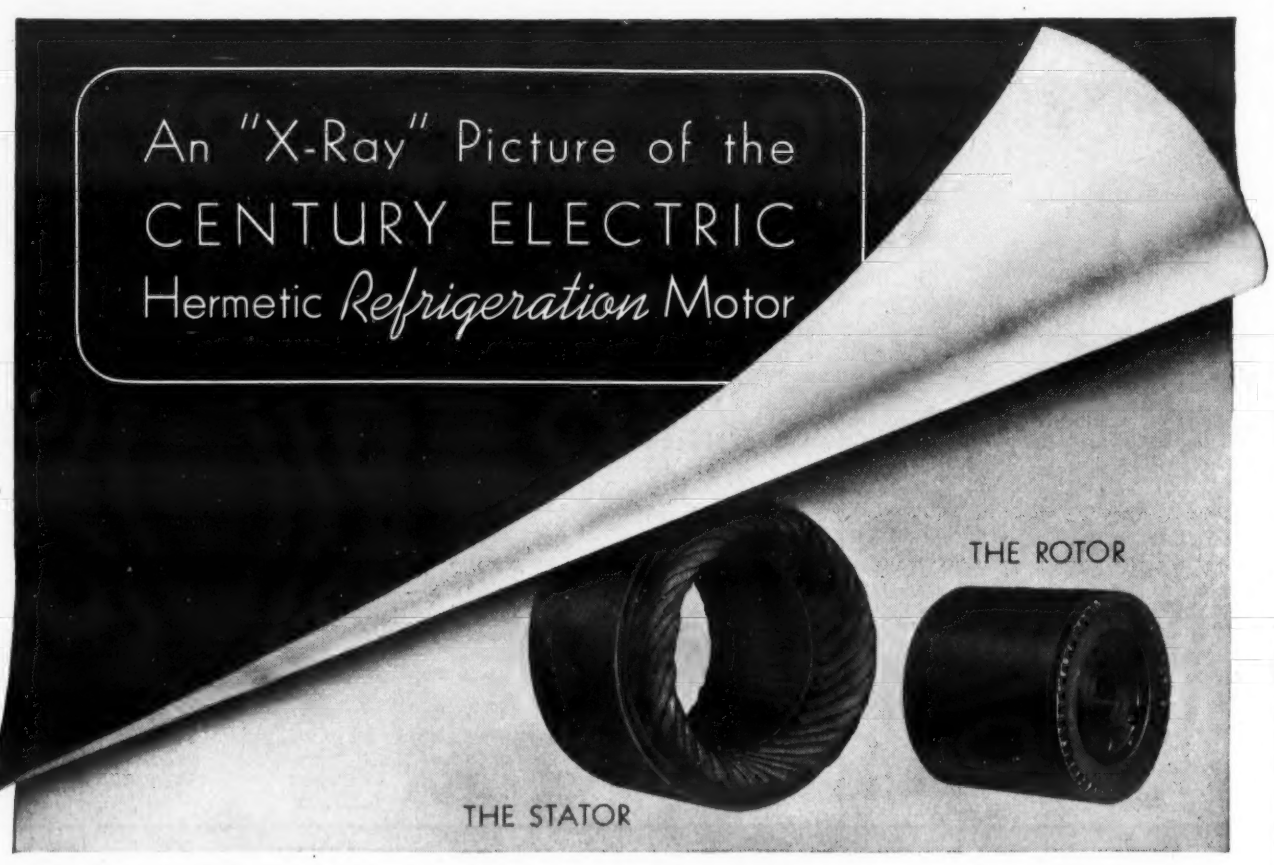

Quiet and Unseen, It Will Be Extremely Popular On Many Leading Post-War Air-Conditioning and Refrigeration Units

Quietly and unseen, the Hermetic Motor will furnish the dependable power so necessary for air conditioning comfort or effective food preservation.

Above we show a view of the motor's working parts. The Hermetic Refrigeration Motor has been reduced to just two simple, sealed-in parts — a stator and rotor — which you will hardly recognize as an electric motor.

Sealed-in motors are not new. They have been used on small refrigerators quite successfully. But on larger units for air conditioning and frozen foods, Century engineers had to overcome many obstacles. For example, ordinary insulation on the motor windings of smaller units was not satisfactory for the larger motor windings.

Century Engineers were the first to recognize the need for and to develop a combination of magnet wire with a basic new electrical insulation, which made possible, several years ago, the first successful integral horsepower motor for hermetically sealed refrigeration compressors.

Many leading manufacturers of air-conditioning and frozen-food units — whose names are familiar to the American public — will use Century Hermetic Refrigeration Motors for their post-war products.

For top performance and dependability, you can always rely on any of the many types of Century Electric Motors, built in sizes 1/20 to 600 horsepower.

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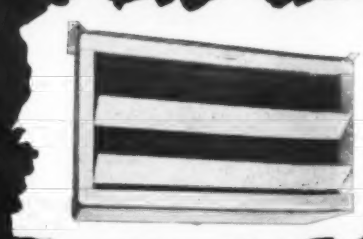
FOR BALANCED HUMIDITY!

O-KAY COILS are engineered to maintain moisture balance between air and products—to prevent dehydration. Designed and built by men who know your application problems. Write today for information.



O-KAY COILS

KAY PRODUCTS COMPANY • Division of Tyler Fixture Corp. • NILES, MICHIGAN

Could Force Out Many Specialty Dealers

(Concluded from preceding page)

pliers price reduces the margin below 25%.'

"In other words, no increase in the wholesale or retail price is granted until the suppliers price of the goods plus the stores operating costs is greater than the retail price.

"It seems obvious that as reconversion goods get into retailing establishments and become an increasing factor in their operations, an increasing portion of their business must be done at smaller margins or at cost.

"No relief is to be given on any item until its total cost gets *greater* than the ceiling price.

"I see nothing here about consulting with the distribution trades. This is presented to Congress as a fixed policy which will govern OPA's wholesale and retail price setting.

"They do say—

"'Suppose, however, that the profits of a trade would fall below its peacetime earnings as a result of full absorption of the increase in the cost of goods. Then an increase in the trade's ceiling prices would be required so that it could earn its peacetime profits.'

WHY IT IS UNFAIR

"This supposed palliative throws them into the area of overall profits, into a field so variable and so incapable of rigid classification as to be entirely impracticable. Think of all the different types of wholesalers and retailers. How can OPA or anyone else hope to classify the distribution trades as to their overall dollar peacetime profits?

"It is unfair to hold out to the distribution trades any hope for relief under any such statement. The initial price ceiling would be imposed under the absorption formula and by the time it became evident that the total peace-time earnings of a trade was suffering the damage would be done.

"After the months required for review could any trade go back to their customers and collect for their OPA imposed losses? Any price limitation based on the overall profits of an industry or a trade is dangerous profit tinkering, leading to no man knows what complications and inequities. Each product should stand on its own feet as it has in the past.

DANGEROUS FALLACY

"It is agreed by practically all authorities on distribution that it is a dangerous fallacy to assume that reconversion goods will sell themselves in any such quantities as must be consumed to provide adequate employment. The only safe way to tackle the problem is for the distribution trades to gear up for a tremendous distribution effort.

"Sales organizations, disorganized by war, must be rebuilt; salesmen retrained. Establishments must be repaired, rebuilt, modernized. Assumptions that goods will automatically sell themselves at materially lower selling costs are not proven. Retailers want to reestablish discontinued services and the consuming public wants them to do so.

"Congress has not told OPA to cut distributor profit margins."

T. K. Quinn Explains How Policy May Ruin 'Pioneering' Type of Dealer

NEW YORK CITY—OPA's reconversion pricing policy seems to be directed at reducing dealer's margins on new products below prewar rates by 15 to 20%, and distributor's margins by 25%, T. K. Quinn, president of Monitor Equipment Co., told the American Marketing Association.

"The very large chains may be able to stand these reductions, but the independent factors who give personal service and create the demand for goods of the kind we must have for future full employment, will be liquidated if that policy is continued," Mr. Quinn declared.

"These compensation margins should not be reduced by law below prewar rates any more than we should reduce factory workers wages —not even to make a lower consumer price showing."

The speaker said that the notion that distribution costs too much is purely theoretical, remains unproved, and should be adjusted by practical competition and experience—not by law or edict.

"What is involved is basically the question of our future prosperity," he continued. "We must not kill or discourage the creative factors on whom we are dependent for future market development.

"No one can conscientiously advise returning veterans to look forward with hope to opportunities as indenpdent business men in fields where compensation margins are being reduced by government edict from 15 to 25% below prewar levels, when everything else is going up."

The present OPA price policy is officially expressed as follows, said Mr. Quinn—"When supplier's prices increase, OPA's stand is that higher price ceilings of the wholesaler and retailer should occur only if the absorption of supplier's price increase would reduce margins on commodities below the *average* cost of doing business." This means, said the speaker, that the above-the-average cost operator who may give greater service and has been satisfied with a lower percentage of net profit will actually be forced to sell at a loss.

Mr. Quinn cited an example in which the manufacturer was allowed a higher net selling price to the distributor to allow for admitted higher labor and material costs on a certain new product. Then OPA cut the distributor's prewar gross margin from 16¾% to 12% and the dealer's margin from 40% to 33%.

"Now, the product in question," explained Mr. Quinn, "would normally go through (1) a lower gross margin, limited service sales channel and (2) a higher margin better service, developmental channel. But under the new artificial gross profit limits only the first named channel can afford, under present conditions, to handle the product.

"So constructive, higher cost selling is discouraged and the business forced to the lower cost, more mechanical operator. . . .

"The independent dealers and distributors, particularly in the specialty field, are the ones who do creative selling. They are not mere mechanical distributors. We shall be largely dependent on them to stimulate new demands and create new markets after the war.

"Without them, I tell you frankly there is much less, if any chance of realizing the sale of the necessary 40% more goods after the war and therefore much less hope for the production and full employment we so earnestly seek.

"Refrigerators and washers, automobiles and frozen foods, all had to be pioneered. *And the lowest, or average cost operators now favored by the OPA policy on trade margins are not pioneers.*"

EXPERIENCE . . . QUALITY . . . SERVICE—that's what you get when you let Union Steel Products work with you on shelving for your post-war models. Our men have had years of experience in design and manufacture . . . our plant has every needed facility to turn out attractive, strong and correctly designed shelves and baskets. Let us suggest ways to turn out better shelving at lower costs. Available only in lots of 1000 and over. Write for our new brochure on Refrigerator Shelving.

UNION STEEL PRODUCTS CO.
531 Berrien St., Albion, Michigan

GENUINE MAYFLOWER
CONDENSING UNITS AND PARTS
Jobber Inquiries Invited
A complete line backed by nearly a quarter century of user confidence. Write for prices.

MAYFLOWER PRODUCTS, INC.
13 S. 5th St., Richmond, Ind.

PANELYTE* *PRECISION-MOLDED* **FAN BLADES** *GIVE YOU THESE* **9** *ADVANTAGES:*

Panelyte Blade (62" long — 14½" wide) mass-produced for Hartzell Propeller Fan Company, Piqua, Ohio, being removed from mold.

1. QUIET OPERATION
2. LIGHT WEIGHT
3. RESISTANCE TO CORROSION
4. LOW MOISTURE ABSORPTION
5. GREAT STRENGTH
6. STABILITY UNDER TEMPERATURE CHANGES
7. LOWER STARTING CURRENT URGE
8. REDUCED BEARING LOADS
9. TROUBLE-FREE PERFORMANCE

Panelyte Fan Blades . . . from midgets 2" long to 62" giants . . . are precision-molded in straight line mass production. The unique combination of properties of these blades makes them ideal for the complete range of applications . . . from household fans, cooling fans in refrigerators and air-conditioning units where quiet operation is a major requirement, to blades such as those supplied for outdoor cooling tower fans and other industrial and domestic uses where resistance to corrosion and extremes of temperature are paramount.

The techniques perfected in the molding of aircraft propeller blades in wartime will produce better *fan blades* for peace time uses.

Panelyte engineers are ready to work with you . . . to discuss the design and mass production of fan blades or other molded or fabricated parts. Write for factual "Data Book."

PANELYTE *the structural plastic*

PANELYTE DIVISION
ST. REGIS PAPER COMPANY
230 PARK AVENUE
NEW YORK 17, N. Y.

Sales Offices: Atlanta, Boston, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Kansas City, Los Angeles, Mexico City, Montreal, New Orleans, Phoenix, Portland, St. Louis, St. Paul, San Francisco, Seattle, Syracuse, Toronto, Trenton, Vancouver.

★ RECORD MAKER IN DESIGN, DEVELOPMENT AND MASS PRODUCTION OF STRUCTURAL RESINOUS LAMINATED PARTS FOR THE REFRIGERATOR INDUSTRY

MAGIC IN A SMALL BOTTLE

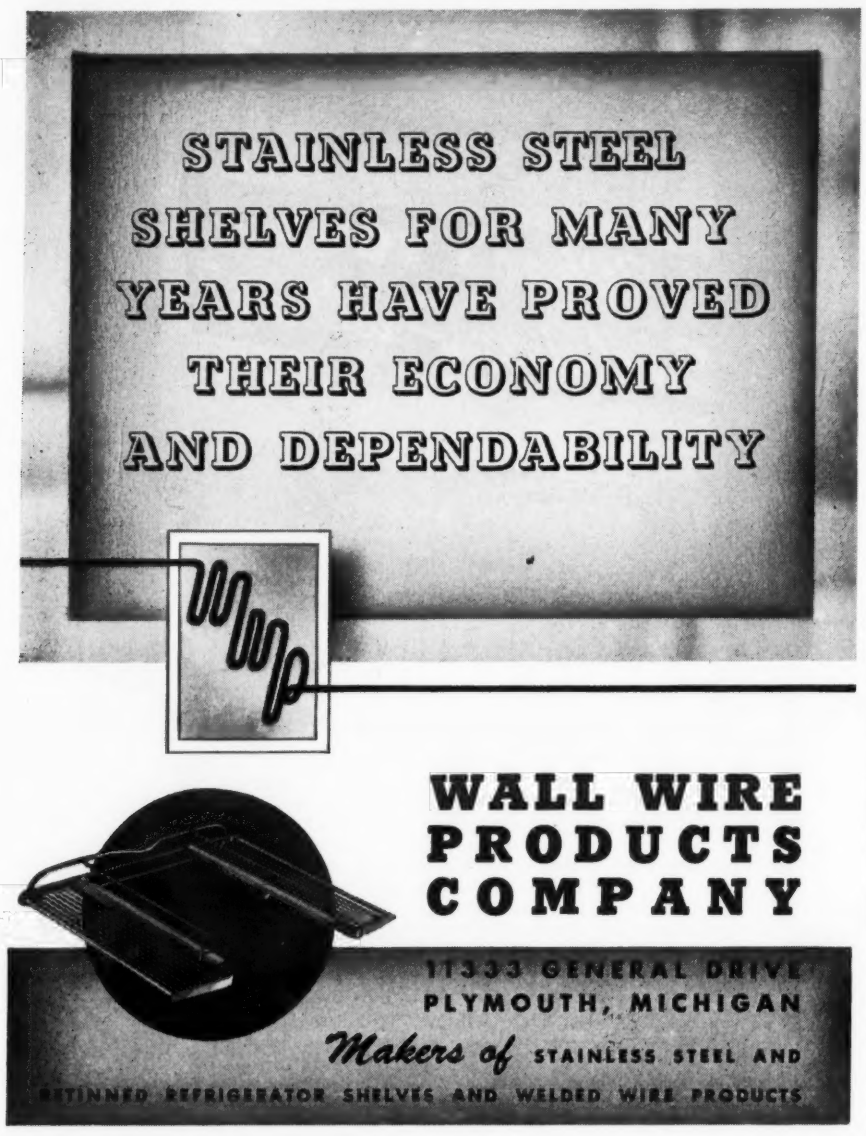
FREEZE-UPS ELIMINATED *RIGHT AWAY!*

ICE-X quickly cures emergency freeze ups when ice forms at the expansion valve or capillary tube. Harmless to use. Great for Freon, Carrene, or Methyl Chloride systems . . . The dependable liquid anti-freeze.

"ONE SERVICE MAN TELLS ANOTHER - IT'S GREAT"

ORDER FROM YOUR JOBBER OR—

EXCLUSIVE NATIONAL DISTRIBUTOR
THE HARRY ALTER CO. 1728 S. MICHIGAN AVE. CHICAGO 16, ILLINOIS
JOBBERS: WRITE FOR SPECIAL PROPOSITION!



OPA Tightens Stove Dealer Registration

DETROIT — Registration requirements affecting stove dealers and distributors are being tightened because the supply of rationed stoves is too small to warrant approving additional dealer outlets except in unusual circumstances, OPA announced last week.

OPA explained that nation-wide stove rationing went into effect Aug. 24, 1943 and that all dealers and distributors who had sold stoves during the base period of 1941 and 1942 were eligible to register and deal in rationed stoves. Under the new provision, merchants who sold stoves during the base period, but who have not registered with OPA will no longer be given preference over other applicants for registration. This will mean that some stove merchants who discontinued the line before stoves were rationed will be excluded from reentering the business.

Stoves now rationed are: Gas heaters, gas ranges and cooking stoves; oil and kerosene heaters; oil, kerosene and gasoline ranges and cooking stoves; and conversion range oil burners.

Stove rationing regulations are also being clarified by a uniform requirement that sellers must, in addition to acknowledging orders from dealers and distributors within three days after receipt, state the expected delivery date.

Another provision specifies action to be taken in cases where the delivery date is not acceptable to the buyer, or where a seller is unable to deliver on the expected delivery date. Whenever an order is rejected, the seller is required to return the certificate to the buyer and state why he is returning it.

Retention of dealers' and distributors' records, originally required for two years, is continued indefinitely.

Lack of Motors, Manpower Retards Oil Burners

WASHINGTON, D. C.—Lack of manpower and difficulty in obtaining fractional horsepower motors are retarding production of oil burners despite revocation of Order L-74, members of the Oil Burner Industry Advisory Committee said at their recent meeting.

Revocation of L-74 removed quota limitations on production and restrictions on sale, and installation of domestic type (Class B) burners. However, the use of oil is still controlled by the Petroleum Administration for War through that agency's Petroleum Distribution Order 13, and by Office of Price Administration rationing, WPB officials pointed out.

In the first quarter of 1945, shipments of Class B burners totaled 17,451, and of industrial burners totaled 9,269, WPB officials said. Second quarter shipments of Class B burners are expected to amount to from 21,000 to 25,000 units.

Appliances Acceptable As Security For Mortgages

MONTPELIER, Vt.—The National Life Insurance Co. here has announced that in the future certain household equipment will be considered as part of real estate security for loans.

The new loan or so-called "packaged mortgage" was announced by L. Douglas Meredith, vice president, and chairman of the committee on finance of the National Life, after approval had been voiced by the members of the board of directors of the company.

New gas or electrical appliances, such as ranges and refrigerators, for which reasonable values are included in the appraisal at the time the application is submitted, will be considered as part of the real estate security for loans, subject to rules and regulations which will be prescribed by the legal department.

Sunroc Sales Head

RICHARD A. ANGUS
Formerly production manager of Sunroc Refrigerator Co., he has been named sales manager of the firm.

Thompson Water Cooler Co. Moves to New Offices

BOSTON—Thompson Water Cooler Co., New England distributor for General Electric water coolers, has moved its headquarters to 832 Commonwealth Ave., Boston. This concern rents, sells, and services General Electric equipment to industrial and commercial establishments. It has eight other sales and service offices throughout New England, in which territory it has operated for 15 years as drinking water specialists.

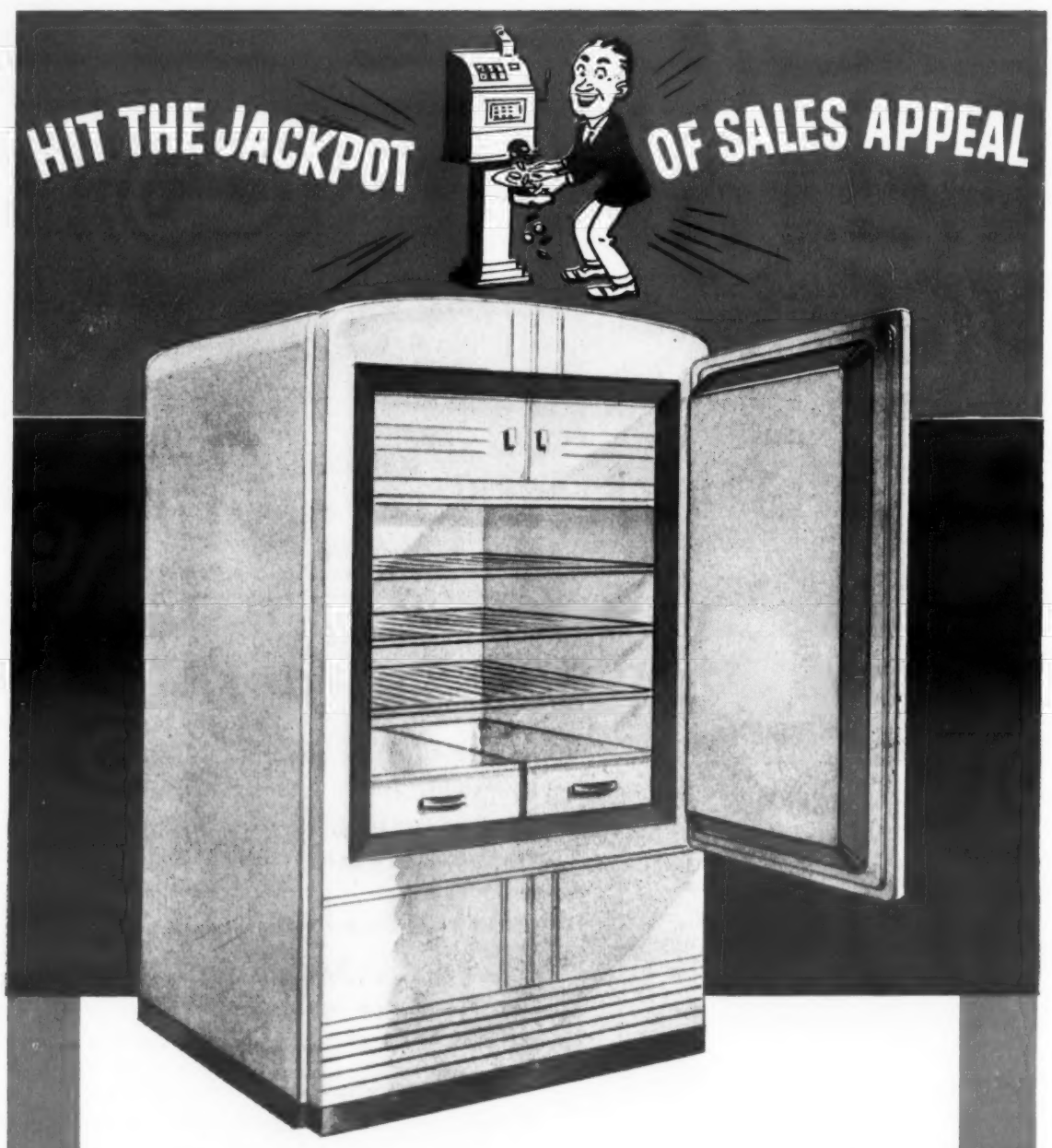
Kelvinator Votes Dividend

DETROIT — Directors of Nash-Kelvinator Corp. at a meeting on Thursday, May 24, voted a dividend of 12½ cents per share on outstanding capital stock, payable June 29 to stock of record on June 4.

Sears Store Plans Annex

FT. WAYNE, Ind. — Sears, Roebuck & Co. will open a household appliance outlet adjacent to its present location here after the war, according to J. C. Jensen, manager.

The store has leased 4,000 ft. of floor space in the building.



Sometimes an easy, inexpensive, and apparently insignificant change in the details of a product will have amazing effects sales-wise.

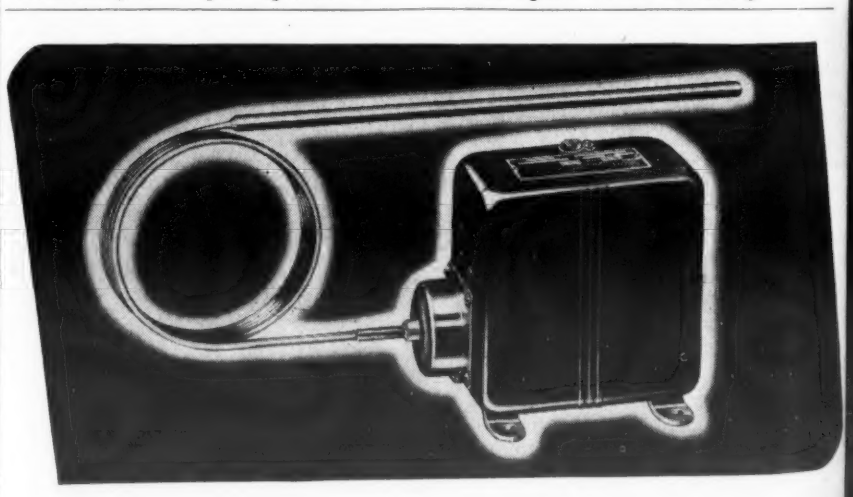
Here's a chance to cash in on an idea like that—colored breaker strips and door backs in Formica laminated plastic.

Many buyers will regard the extent to which plastics are used as the mark of modernity in after the war merchandise. If a lot of plastics are visible they will accept it readily as thoroughly post-war!

Formica breaker strips and door backs will be as easy to buy and install as black and white ones. But they will sell much easier. And there will be no sacrifice in durability or efficiency. This handsome plastic material will not spot, stain or wear shabby. It will be a potent sales force for after-the-war refrigerators.

FORMICA

The Formica Insulation Co. 4613 Spring Grove Ave. Cincinnati 32, Ohio



Proper Temperature Control . . . SAVES!

Refrigeration protects critical food supplies against spoilage and waste . . . protects their quality. But the degree of this protection depends upon the efficiency of the automatic control.

That's why PENN developed AVRGAIRE. Designed for walk-in coolers, reach-in boxes and all "above-freezing" applications, AVRGAIRE incorporates a *single, new-type temperature bulb* which is applied in an *entirely new and different manner.* Result? AVRGAIRE holds box temperature within extremely close limits without irregular short-cycling of the compressor. It automatically defrosts on each operating cycle when box load is normal, BUT delays defrosting when box is loaded with warm produce and extra cooling capacity is required. And it maintains uniform humidity to minimize dehydration and "sliming" losses.

But get the full story on AVRGAIRE, complete with pictures and diagrams. Write *Penn Electric Switch Co., Goshen, Ind.* Export Division: 13 E. 40th St., New York 16, U.S.A. In Canada: Power-lite Devices, Ltd., Toronto, Ont.

PENN AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

What's the Veteran's Prospect For His Own Business?

WASHINGTON, D. C. — If the Army Service Forces' estimate is correct, half of the 2 million servicemen being brought home for demobilization are planning to start businesses or buy farms for themselves.

A sample poll taken by the Army Service Forces included 1,000 white enlisted men in nine Army camps within the continental United States. The survey followed the procedure established in recent nationwide surveys, and its results compare favorably with theirs.

Returns showed that 6% of the men interviewed have already taken their postwar planning into the detailed blueprint stage. They are going to establish businesses of their own. Another 4% have done the same toward buying their own farms.

Four per cent already own their own farms and businesses, or are part owners, often with relatives, and plan to continue without further delay.

Of the rest, 34% have firm intentions and fairly definite plans toward doing the same thing within the first few years after returning to civilian life. The total thus is 48%, or almost half. And this figure so far covers only the 2 million men now up for demobilization.

The Army has prepared these figures as an introduction to problems which these service men must face if working for themselves is what they want to do. Inspection of the records shows that any man who goes into business for himself is playing a long shot, and that even when he wins he will have to work a lot harder for success than he ever did when working for somebody else.

First of all, the risk of failure is high. Even in 1940, a boom year, almost half a million firms went out of business. And another quarter of a million companies changed hands.

The smaller firms suffer the greater casualties. In that year, companies with less than four employes made up 83% of the country's total, but represented 96% of those that went out of business. New firms show a similarly high casualty list.

Second is the fact that a man who works for himself most often works longer and harder than the man who works for somebody else. Here are the weekly averages:

Will war veterans be successful in setting up their own business establishments, such as refrigeration sales and service firms after the war? Some, like Corp. Stanley M. Davidosky (left) and Corp. John McDougall, who were refrigeration mechanics in civilian life, have acquired additional experience in this field while in uniform. What are their plans?

46.5 hours for the typical wage or factory worker.
54.2 hours for the average self-employed city worker.
58.7 hours for the average hired hand on the farm.
68.6 hours for the average self-employed farmer.

During peacetime, the difference usually is even greater.

Finally, the man who works for himself and makes a go of it most often is an older man, well above the average age of the men coming out of uniform. It is a matter not only of ambition and ability, but also of experience and capital. The average ages for self-employed workers ran as follows:

46.1 years in the cities.
45.5 years in rural non-farm areas.
46.2 years on the farms.

By actual count, there was a much higher percentage of young men making a success of farming than there was of young men in business for themselves. The 1940 census showed that of the country's young men from 25 to 29 years old:

7.2% were self-employed in business in the city.
10.2% were self-employed in rural nonfarm occupations.
47.4% were self-employed in farm areas.

The greater danger, the Army survey points out, is that the majority of ex-service men are heading for the tougher, more highly competitive field—that of going into business for themselves in small towns or in the city.

National Refrigeration Supply Jobbers Association Member

Planned Production

Manufacturers know that assured distribution of new items and steady distribution of regular products contribute much to production economies. NRSJA member firms are well financed, able to stock adequate supplies of new products, and to merchandise predictable quantities of proven products They offer steady, dependable volume backed by competent understanding of the local market.

NATIONAL REFRIGERATION SUPPLY JOBBERS ASSOCIATION
Dependable Distribution
Headquarters: Paramount Building, Cincinnati, Ohio

WALK-IN COOLERS
AVAILABLE FOR PROMPT DELIVERY WITH OR WITHOUT CONDENSING UNITS
(NO PRIORITY REQUIRED)
FOGEL REFRIGERATOR COMPANY 5400 Eadom St., Philadelphia 37, Pa. Since 1899

Refrigeration
AND AIR CONDITIONING
YOU will find NIBCO WROT Fittings, return bends and tubular parts mighty useful in laying out air conditioning or refrigeration equipment. In many cases, instead of having to buy a special part, you will find what you need in our standard line...tees, ells, couplings, reducers, adapters, crosses, return bends, hangers ...more than one thousand items and sizes are listed in Catalog 613. If you do not have a copy, write for it today.
NIBCO WROT Copper Fittings
NORTHERN INDIANA BRASS CO.
ELKHART, INDIANA
VALVES AND FITTINGS SINCE 1904

"Artic"-FOR REFRIGERATION

UNIFORM... DRY... 99.5% PURE...

DU PONT METHYL CHLORIDE

HIGH-PURITY "Artic" Methyl Chloride is designed to meet your every requirement.

ORDER NOW—but don't stock up! It's available as you need it.

RETURN CYLINDERS PROMPTLY! —Help assure yourself and others rapid deliveries! E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Delaware.

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Purity . . . . . 99.5% Methyl Chloride
Moisture . . . . . 0.008% by wgt. max.
Acid (as HCl) . . . 0.001% by wgt. max.
Residue on Evaporation 0.01% by wgt. max.
Boiling Range(760mm) –24.6° to—23.6°C.
Color . . . . . water white, clear

SALVAGE WASTE PAPER! IT'S VITAL TO WAR!

DU PONT ELECTROCHEMICALS

DU PONT REG. U. S. PAT. OFF. BETTER THINGS FOR BETTER LIVING ...THROUGH CHEMISTRY

WEBER *first*

IN PEACE...WAR...POST-WAR

Commercial Refrigeration, Soda Fountains, Ice Cream and Frosted Food Cabinets

★

Investigate the country's most complete line of *commercial refrigerators, soda fountains* and Ice Cream and Frosted Food Cabinets before you make any post-war sales plans.

PLAN NOW TO SELL THE WEBER LINE INSTEAD OF SELLING AGAINST IT

Write today for data concerning the details of Weber distributorships. This franchise will make real money for those concerns who can qualify.

★

WEBER SHOWCASE & FIXTURE CO. INC.

5700 AVALON BOULEVARD • LOS ANGELES, CALIFORNIA

Coldspot Replacement Unit Ceiling Set at $81

WASHINGTON, D. C.—Maximum prices for the Coldspot refrigerator's replacement unit, Model No. 106.244201, have been set by RMPR 136, Order 436.

For sales of the replacement unit by the manufacturer, Sunbeam Electric Mfg. Co., the maximum price will be $66, including Federal excise tax.

For sales by Sears, Roebuck & Co. to the consumer, the price will be $81. This figure will include Federal excise tax, and a five year guarantee to the original purchaser against faulty material or workmanship. When a unit is replaced under the guarantee, the order states, no allowance on the old unit is authorized.

OPA Revises Prices on Frigidaire Ranges

DAYTON, Ohio—Revisions in the recently announced ceiling prices have been approved by OPA for two models of electric ranges produced by Frigidaire Division, General Motors Corp. Corrected wholesale and retail prices by zones are shown in the following table:

Article	Zone 1 Each	Zone 2 Each	Zone 3 Each	Zone 4 Each	Zone 5 Each
Maximum prices for sales by factory-owned branches to retail dealers					
Model No. B-17	$119.46	$120.89	$122.65	$123.97	$127.16
Model No. B-17-LL ..	115.83	117.26	119.13	120.34	123.53
Maximum prices for sales by wholesale distributors to retail dealers					
Model No. B-17	$116.95	$118.25	$119.85	$121.05	$123.95
Model No. B-17-LL ..	113.40	114.70	116.40	117.50	120.40
Maximum prices for sales to ultimate consumers by retail dealers who purchase from wholesale distributors					
Model No. B-17	$175.35	$177.35	$179.85	$181.60	$186.10
Model No. B-17-LL ..	170.10	172.10	174.60	176.35	180.85

Norge Negotiating For Illinois Factory Site

DETROIT—Negotiations are nearing completion for acquisition of a factory site at Herrin, Ill., and if the transaction is consummated, the Norge division of Borg-Warner Corp. will concentrate all laundry equipment manufacture there as soon as a plant can be constructed on the property, it was announced by Howard E. Blood, president.

Mr. Blood explained that the contemplated acquisition marks another major step in a comprehensive program of plant decentralization, "deemed necessary to permit the company to meet its announced post-war objectives of high-employment, efficiency, and volume in each of its factories." Last fall, the company announced the purchase of a plant in Effingham, Ill., for electric and gas range output, and the intention to streamline each of its plants for single-purpose, straight-line production. Muskegon and Muskegon Heights, Mich., factories will manufacture electric refrigerators and develop new products.

If the Herrin site is acquired, construction of a factory will be started as soon as materials are obtainable, which the company hopes "will be in the near future," Mr. Blood said. "Once started," he continued, "we'll expedite fabrication and machinery installation so that we can begin filling our large accumulated order backlog at the earliest opportunity." Given prompt priority assistance in material acquisition, Norge can begin building washing machines in a few months, he predicted.

Suggests a First-Floor Laundry to End 'Blues'

NEW YORK CITY—A first-floor laundry as the solution for most washday "blues,"—is the idea projected by Mary Davis Gillies in *McCall's* May issue.

Mrs. Gillies maintains that it would be quite simple to add such a room to a new house. Remodeling an old house to include such a room might offer difficulties, but all possibilities for a first-floor laundry should be considered before resigning oneself to the impossible feat of doing the clothes in a dreary dark corner of the basement and at the same time keeping an eye on the children, the kitchen, and the front door—to say nothing of having to lug heavy, wet clothes upstairs to the clothesline.

The handsome new washers, ironers and irons, the improved furnaces, and new ways of housebuilding make a first-floor workroom a natural for after the war when the factories are again turning out the labor saving products of peacetime living.

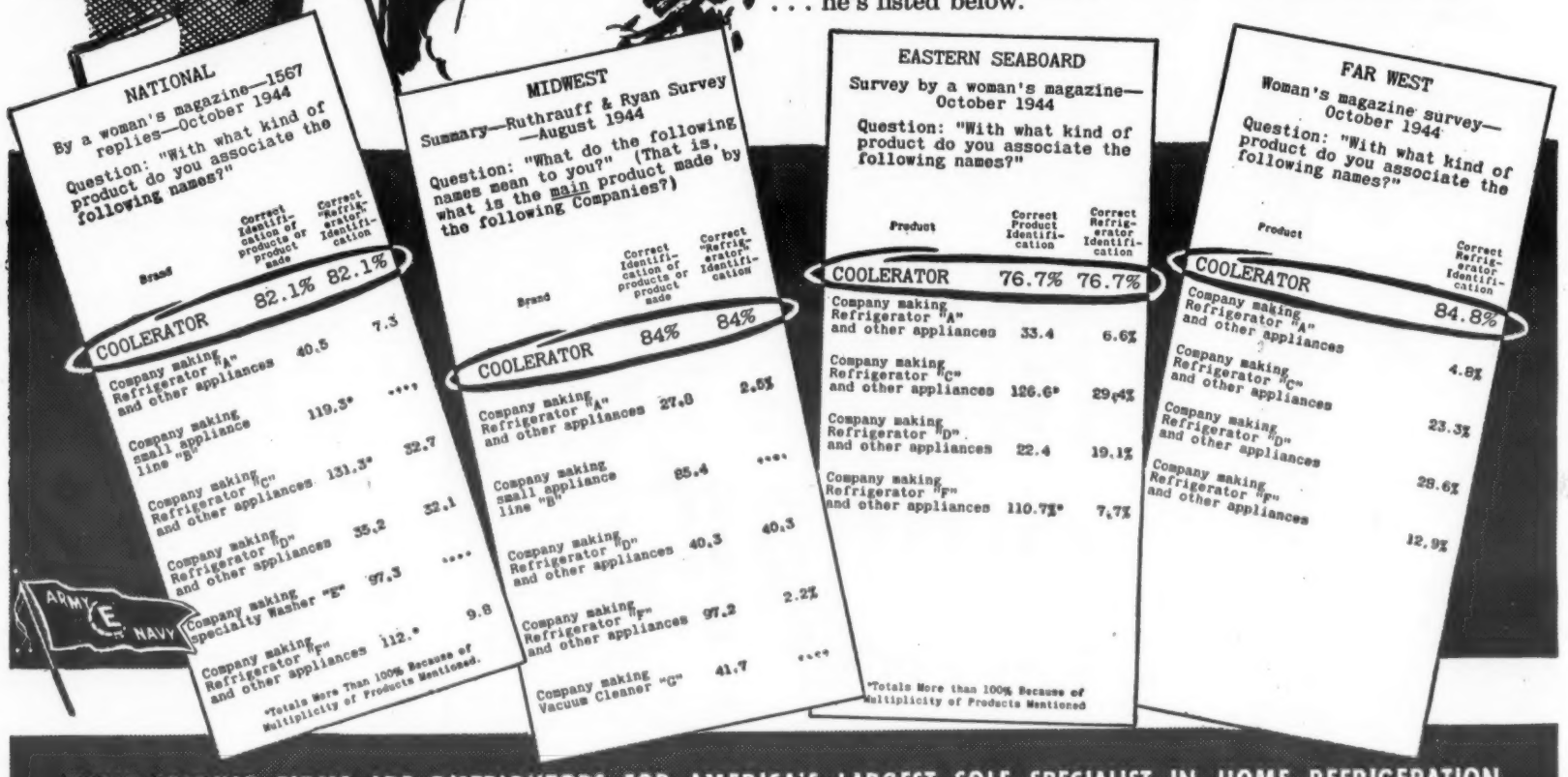
Such a room as described in the *McCall's* article has ventilated bins with removable canvas bags into which soiled clothes are sorted to await washday. Above the bins in cupboards are stored soaps and stain removers. There is an automatic cycle washer, a new type dryer, an ironer, an iron and ironing board for hand finishing.

"Putting away" is made easy by a wheel table with ventilated shelves which receive the clothes as ironed

A BIG Selling Advantage!

8 OUT OF 10 WOMEN ASSOCIATE COOLERATOR *with Fine Refrigeration*

IN SURVEY AFTER SURVEY, no other independent refrigerator manufacturer even approaches this registration. This fact plus the powerful advertising campaign now being run on The New Coolerator has created many ready-to-buy customers for dealers everywhere! IF YOU HAVEN'T RECEIVED YOUR COPY OF THE 40-PAGE COOLERATOR PROTECTED PROFIT PROGRAM, SEE YOUR DISTRIBUTOR . . . he's listed below.


NATIONAL
By a woman's magazine—1567 replies—October 1944
Question: "With what kind of product do you associate the following names?"
Brand
Correct Identification of Products or Product made
Correct "Refrigerator" Identification
COOLERATOR 82.1% 82.1%
Company making Refrigerator "A" and other appliances 40.5 7.3
Company making small appliance line "B" 119.3* ****
Company making Refrigerator "C" and other appliances 131.3* 32.7
Company making Refrigerator "D" and other appliances 35.2 32.1
Company making Specialty Washer "E" 97.3 ****
Company making Refrigerator "F" and other appliances 112.* 9.8
*Totals More Than 100% Because of Multiplicity of Products Mentioned.
MIDWEST
Summary—Ruthrauff & Ryan Survey —August 1944
Question: "What do the following names mean to you?" (That is, what is the main product made by the following Companies?)
Brand
Correct Identification of Products or Product made
Correct "Refrigerator" Identification
COOLERATOR 84% 84%
Company making Refrigerator "A" and other appliances 27.8 2.5%
Company making small appliance line "B" 85.4 ****
Company making Refrigerator "D" and other appliances 40.3 40.3
Company making Refrigerator "F" and other appliances 97.2 2.2%
Company making Vacuum Cleaner "G" 41.7 ****
EASTERN SEABOARD
Survey by a woman's magazine—October 1944
Question: "With what kind of product do you associate the following names?"
Product
Correct Product Identification
Correct Refrigerator Identification
COOLERATOR 76.7% 76.7%
Company making Refrigerator "A" and other appliances 33.4 6.6%
Company making Refrigerator "C" and other appliances 126.6* 29.4%
Company making Refrigerator "D" and other appliances 22.4 19.1%
Company making Refrigerator "F" and other appliances 110.7%* 7.7%
*Totals More than 100% Because of Multiplicity of Products Mentioned
FAR WEST
Woman's magazine survey—October 1944
Question: "With what kind of product do you associate the following names?"
Product
Correct Refrigerator Identification
COOLERATOR 84.8%
Company making Refrigerator "A" and other appliances
Company making Refrigerator "C" and other appliances 4.8%
Company making Refrigerator "D" and other appliances 23.3%
Company making Refrigerator "F" and other appliances 28.6%
12.9%
ARMY E NAVY

THESE LEADING FIRMS ARE DISTRIBUTORS FOR AMERICA'S LARGEST SOLE SPECIALIST IN HOME REFRIGERATION

Akron, O., The Cleveland Radiolectric Co.
Albuquerque, N. Mex., Alford's
Allentown, Pa., Bell-Clark & Company
Atlanta, Ga., The Yancey Company, Inc.
Baltimore, Md., David Kaufmann's Sons
Bangor, Me., Coffin & Wimple
Binghamton, N. Y., Southern Tier Electl. Supply Co., Inc.
Birmingham, Ala., R. P. McDavid Co., Inc.
Boston, Mass., Bigelow & Dowse Company
Buffalo, N. Y., H. D. Taylor Company
Burlington, Vt., J. S. George Supply Co.
Canton, O., The Cleveland Radiolectric Co.
Charlotte, N. C., Southern Radio Corporation
Chattanooga, Tenn., Radio & Appliance Distributors, Inc.
Chicago, Ill., Commonwealth Utilities Company
Cincinnati, O., Ohio Appliances, Inc.
Cleveland, O., Cleveland Radiolectric, Inc.
Columbus, O., Ohio Appliances, Inc.
Dallas, Texas, The Schoellkopf Appliance Co., Ltd.
Davenport, Ia., G. W. Onthank Co.
Dayton, O., Ohio Appliances, Inc.
Denver, Colo., David C. Dodge Company
Detroit, Mich., Republic Supply Corporation
Des Moines, Iowa, G. W. Onthank Company
El Paso, Texas, Albert Mathias Company
Elmira, N. Y., Southern Tier Elec. Supply Co.
Fargo, N. D., Fargo Glass and Paint Co.
Grand Rapids, Mich., State Distributing Co.
Houston, Texas, Straus-Frank Company
Huntington, W. Va., Van Zandt Supply Co.
Indianapolis, Ind., Appliance Distributors, Inc.
Jacksonville, Fla., Consolidated Automotive Co.
Kansas City, Mo., Enterprise Wholesale Furn. & Stove Co.
Knoxville, Tenn., C. M. McClung & Co.
Little Rock, Ark., Holcomb Gunn Co.
Los Angeles, Calif., Sues-Young Co.
Louisville, Ky., Ewald Distributing Company
Memphis, Tenn., Mississippi Valley Furniture Co.
Milwaukee, Wisc., Taylor Electric Company
Nashville, Tenn., Keith Simmons Company, Inc.
New Haven, Conn., American Distributors, Inc.
New Orleans, La., Modern Appliance & Supply Co., Inc.
New York, N. Y., D. W. May Corporation
Export—J. H. Latham, 70 Pine St.
Oklahoma City, Okla., Jenkins Wholesale Division
Omaha, Neb., G. W. Onthank Co.
Philadelphia, Pa., Elliott-Lewis Electrical Co.
Phoenix, Ariz., Albert Mathias Co.
Pittsburgh, Pa., J. A. Williams Company
Portland, Ore., Bargelt Supply
Providence, R. I., Providence Electric Company
Richmond, Va., Wyatt-Cornick, Inc.
Rochester, N. Y., Bickford Brothers Co.
St. Louis, Mo., Stanley Distributing Company
Salt Lake City, Utah, Refrigeration Serv. & Eng. Co.
San Antonio, Texas, General Hotel Supply Company
San Francisco, Cal., McCormack & Company
Schenectady, N. Y., LeValley, McLeod, Kinkaid, Inc.
Seattle, Wash., Seattle Radio Supply, Inc.
Sioux Falls, S. D., G. W. Onthank Co.
Spokane, Wash., Prudential Distributors, Inc.
Springfield, Mass., The Burden-Bryant Co., Inc.
Syracuse, N. Y., Paul Jeffrey Company
Toledo, O., Walding, Kinnan & Marvin Co.
Utica, N. Y., Horrocks-Ibbotson Company
Vincennes, Ind., Ebner Ice & Cold Storage Co.
Washington, D. C., May Hardware Company
Willmar, Minn., Minnesota Electrical Supply Co.
Youngstown, O., The Cleveland Radiolectric Co.

EASY TO USE!

Another reason why so many service men **all over the country** do their buying through the

NEW 1945 AIRO Wholesale CATALOG of Refrigeration and Air Conditioning PARTS - TOOLS - SUPPLIES

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2732 N. Ashland Ave., Dept. B
Chicago 14, Illinois

OPA Orders Appliance Repair Firms In Miami Area To Furnish Data on Charges

WASHINGTON, D. C.—Strict invoice and records procedure for appliance repair firms using hourly service rates has been outlined for those firms in Dade County, Fla., under OPA's Supplementary Service Regulation 48 to Revised Maximum Price Regulation 165, Miami Order G-1.

Regulation 48, issued in March, permitted local OPA offices to order service outlets to give their customers itemized invoices for hourly rate service, and to keep specified detailed records, wherever it seemed that customers were being overcharged.

The protest from the industry was immediate and vigorous. Need for the prevention of illegitimate charges was acknowledged, but under the order the first occurrence of overcharging promised to saddle all the service firms in the area with the responsibility for a complicated system of additional invoicing and bookkeeping (*see* the NEWS, April 23, p. 15).

The Dade County order apparently is the first instance of the regulation's enforcement by a local OPA office. The gist of the directive is contained in the following paragraphs:

(A) *Invoices.* Each establishment covered by this order shall furnish each purchaser of repair services with an invoice containing the following information and shall keep a copy thereof in its files for inspection by the Office of Price Administration.

(1) Name and address of the establishment performing the service;

(2) Date;

(3) A brief description of each service supplied for which a separate charge is made;

(4) (i) If a customer's hourly rate alone is used in pricing the service—the customer's hourly rate and the number of hours for which a charge is made (indicating overtime hours if charged at overtime rate);

(ii) If a flat rate manual or labor schedule is used in pricing the service or if time allowance for the service is fixed by any applicable regulation of the Office of Price Administration—the title of the manual, schedule, or regulation; the number or other identification of the operation; the customer's hourly rate; and the number of hours for which a charge is made (indicating overtime hours, if charged for at overtime rates);

iii) If a fixed charge is used in pricing the service—the fixed charge (i.e., a charge not computed by means of a customers hourly rate);

(5) Total labor charge;

(6) Parts and materials furnished and charges made therefor;

(7) Any other charge (and specific indication of its nature); and

(8) Total charge.

(B) *Records.* Each establishment covered by this order, if it has productive employes, shall keep the records indicated in this paragraph, and shall make such records available for inspection by the Office of Price Administration at any time during usual business hours. "Productive employes" are employes who actually do repair work, as distinguished—for example—from the supervisory, clerical, or stock-room employes.

(1) Name of each productive employe together with number of regular and overtime hours worked each day;

(2) Name of each productive employe together with total of regular and overtime hours worked during each pay period, and the total regular and overtime wages paid to that employe for the pay period; and

(3) Total number of hours worked during each pay period by all productive employes on equipment in the stock of the repair establishment or covered by a guarantee as well as any other hours worked for which no charge was made to the customer.

(C) *Sellers covered.* The provisions of this order shall apply to all automotive repair, and appliance repair establishments which use a customer's hourly rate in pricing any of the services which they supply and which are located within Dade County, Florida.

Philco Nets $846,109 In First Quarter

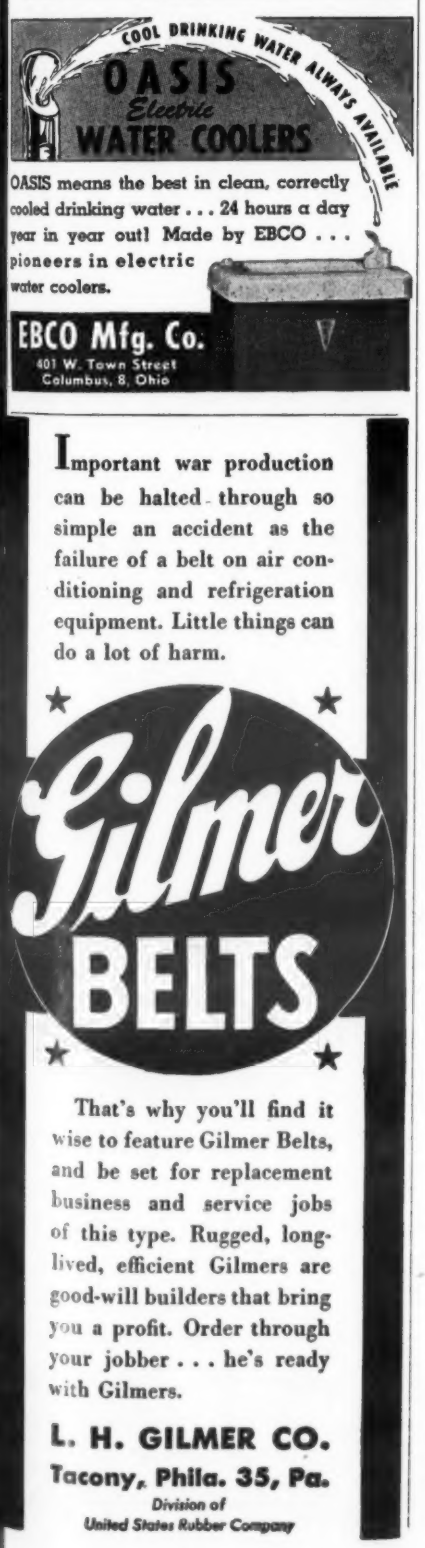
PHILADELPHIA — Net earnings of Philco Corp. in the first quarter of 1945 totaled $846,109 or 62 cents per share, after estimated Federal and State income and excess profits taxes and after provision for adjustment and renegotiation of war contracts. In the first quarter of 1944, earnings amounted to $946,326 or 69 cents per share.

Reynolds Heads Wesco Corpus Christi Branch

CORPUS CHRISTI, Tex.—C. M. Reynolds has been named manager of the Corpus Christi branch of the Westinghouse Electric Supply Co. Mr. Reynolds is the first manager of this branch. He has had 21 years of experience in the electrical business and for the past several years has been district commercial and sales manager for an electrical company in Kansas.

How air conditioning helped increase this bakery's production 20%
FREON safe refrigerants
"Food Industries" carries the "Freon" story to more than 12,500 important readers in the food industry.
FOOD INDUSTRIES
FOR THOSE WHO CONTROL QUALITY THROUGH MANAGEMENT AND PRODUCTION
HERE ARE TWO of a series of fact-giving "Freon" advertisements appearing on year-round schedule in "Food Industries"... a leading publication in the food field.
These case histories explain how air conditioning helps food manufacturers increase production ... lower costs ... improve morale and produce better products.
"How air conditioning serves food field"
... theme of another important "FREON" campaign

Bouillon cubes by the billion...
Year-round air conditioning leads to 50% increase in production
They encourage business men to air condition their own plants . . . and to enjoy the benefits of air conditioning.
This is just one of several "Freon" advertising campaigns appearing in leading publications reaching locker plant operators, architects, engineers and others. They are designed to help you by featuring the advantages of air conditioning and refrigeration. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington, Delaware.
BACK THE MIGHTY 7th WAR LOAN
...BUY BIGGER BONDS
KINETIC
FREON safe refrigerants
REG. U. S. PAT. OFF.
"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.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OASIS means the best in clean, correctly cooled drinking water . . . 24 hours a day year in year out! Made by EBCO . . . pioneers in electric water coolers.
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Division of
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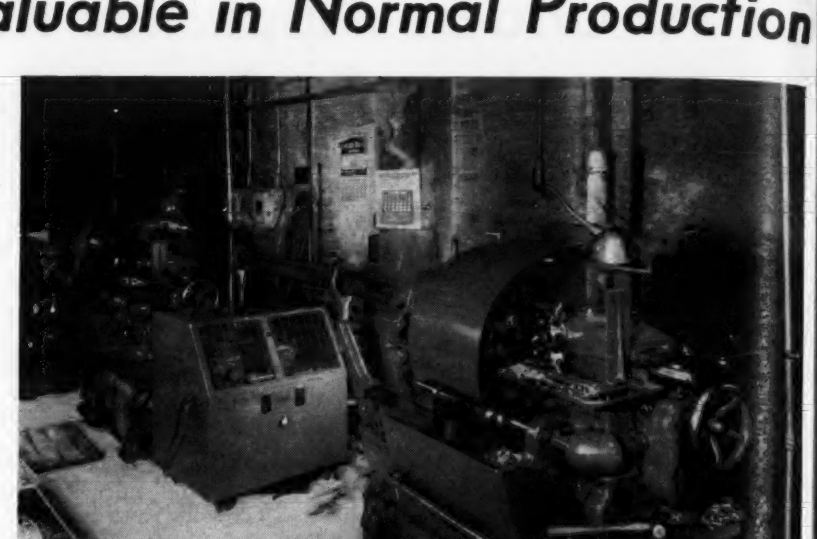
Wartime Refrigeration Applications Prove Valuable in Normal Production

Cooling of Cutting Oils For Machine Tools Has Peacetime Possibilities

EVANSTON, Ill. — Of the many new industrial applications of refrigeration that have been made to speed wartime production, some will be continued in peacetime when efficiency and economy of production, rather than speed alone, will become important again.

One of these developments that may be found useful in normal production is the cooling by refrigeration equipment of cutting fluids employed in machine tool operations to cool both cutting tool and stock. To date, many such systems have been installed to hold cutting oils at constant optimum temperatures for automatic screw machines.

The four Gray-Mills units shown above are connected to a battery of four Acme-Gridley six-spindle automatic screw machines and have eliminated the 20% waste production previously encountered in close tolerance work, besides speeding up operations.



The problem here was to increase production without shortening cutting tool life from the previous three hour limit before resharpening. The single cooling unit refrigerating cutting fluid for two Brown & Sharpe screw machines has increased production 25% to 40%, respectively, without shortening tool life.

SPECIALLY DESIGNED UNITS

Specialized refrigeration units designed for this particular operation have been produced by the Gray-Mills Co. here, which claims several advantages for this application of refrigeration.

"Hot cutting oil," says the company, "kills tools—holds down production—causes costly tolerance headaches and the inevitable rejects. Hot oil fumes make working conditions tough for machine tool operators."

"It has been shown," writes one operator of a tool shop, "that when cutting oil is refrigerated, tool life is increased as much as 20%, and that quality of product and tolerance control also are improved.

"The cooler cutting oil that passes over the work more rapidly carries away the heat that might be transferred to the machine itself, thereby preventing undue wear of bearings and spindles.

"Probably our greatest achievement resulting from the use of industrial refrigeration," declares this plant executive, "is in the fact that the machining operations have been speeded up and production greatly increased."

Most of the applications made by the Gray-Mills Co. employ the firm's model 400 "Flo-Kool" industrial fluid cooling system, which is a self-contained refrigeration unit mounted on wheels. It measures 39 in. high, 29½ in. wide, and 32½ in. long.

It consists of a two-cylinder 2½ in. bore and 1¾ in. stroke compressor rated at 11,000 B.t.u. maximum capacity, which is powered by a 1-hp. motor in the standard model. An air-cooled continuous finned tube condenser is used, permitting the unit to be moved without changing water connections. Methyl chloride is the refrigerant.

CUTTING OIL FILTERED

Fluid tank wherein the cutting coolant is refrigerated has a capacity of 35 gallons and is equipped with two filter screens to remove such impurities as may be picked up in the coolant circuit. Each unit has a pump to pump the cutting oil from the cooling unit to the machine through connecting pipes. Flexible tubing may also be used for these connections.

Coolant pumps are available either as a gear pump for high pressure or as centrifugal pump for high volume. Coolant piping from unit to machine tool is hooked up so that the coolant pump on the refrigerating unit operates in conjunction with another coolant pump which is a part of the machine tool itself.

The installation in the tool shop mentioned earlier in this article consists of four of these model 400 units serving a battery of four Acme-Gridley six-spindle automatic screw machines, producing thin wall brass ferrules.

Previously the plant had found it difficult to maintain high production and machine parts to close tolerances because cutting oil temperatures rose too high. About 20% scrap usually resulted under these conditions. In attempting to overcome this, the plant substituted a soluble oil in place of the conventional sulphurized oil, but the soluble oil resulted in damage to the machine, it was reported.

Installation of refrigerating machines to cool the cutting fluid permitted a return to the sulphurized oil, eliminated tolerance trouble and

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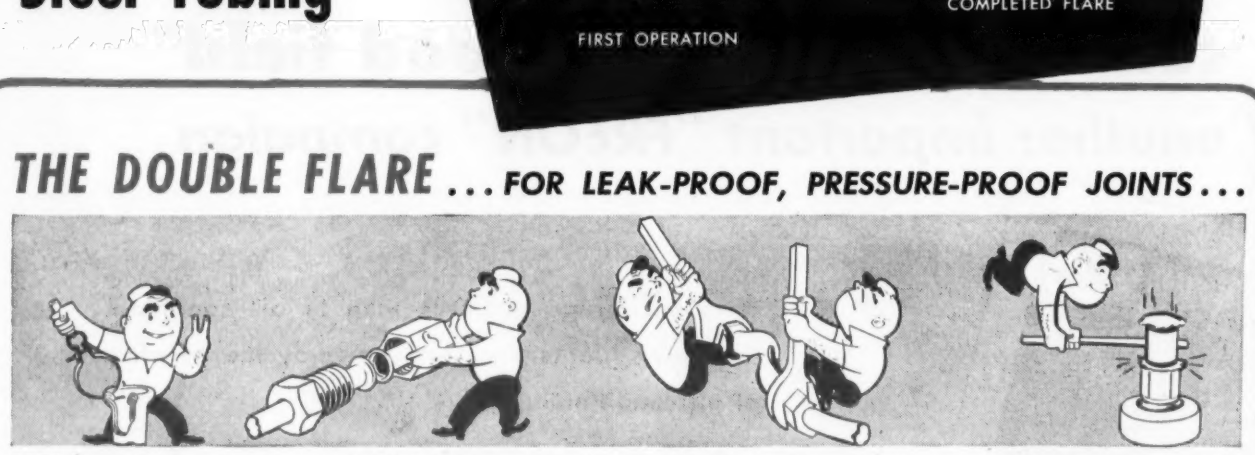
BUNDY DOUBLE FLARE

A Perfect Combination with Bundyweld Steel Tubing

THE DOUBLE FLARE ... FOR LEAK-PROOF, PRESSURE-PROOF JOINTS ...



GIVES almost twice the amount of metal at the seat.

PERMITS frequent removal and replacement of fittings.

SAFELY permits over-torqueing. Held to close tolerance.

CAN be made either by hand or with machine tools.

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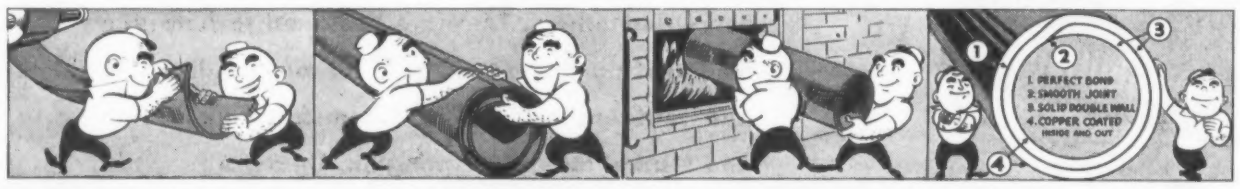

1 Bundyweld Tubing is made by a process entirely different from that used in making other tubing. A single strip of copper-coated S.A.E. 1010 steel is continuously rolled twice laterally...

2 ..into tubular form. Walls of uniform thickness and concentricity are assured by the use of close tolerance cold rolled strip. This double rolled strip passes through a furnace where the . . .

3 . . copper coating fuses and alloys with the double steel walls. After brazing and cooling, it becomes a *solid* double wall steel tube, copper brazed throughout 360° of wall contact . . .

4 . . copper coated inside and out, free from scale, and closely held to dimensions. Hard or annealed in standard sizes up to ⅜" O.D. Special sizes cold drawn. Also furnished in Monel.

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ANSUL

ST IN REFRIGERANTS

Ansul was first in America to produce Sulfur Dioxide for refrigeration (1915).

At the demand of the growing fractional-tonnage household refrigeration industry, Ansul began production of Methyl Chloride.

Ansul still analyzes *individually* every cylinder before it is shipped because—

The purity, dryness, and safety of handling of Ansul refrigerants are still top standards of a high-specification industry which Ansul is proud to have pioneered.

LIQUID Sulfur Dioxide BY ANSUL*

LIQUID Methyl Chloride BY ANSUL*

*REG. U. S. PAT. OFF.

ANSUL CHEMICAL COMPANY
"NOW IN OUR 30TH YEAR"
MARINETTE, WISCONSIN
AGENTS FOR KINETIC'S "FREON-11," "FREON-12" AND "FREON-22"

Life of Cutting Tools Can be Increased or Production Speeded Up With Refrigeration

(Concluded from preceding page)

rejects, and further, speeded up production.

Another installation consisted of a Gray-Mills cooling unit operating with a dual unit of 2-C Brown & Sharpe screw machines which were cutting naval bronze nuts. Production had to be increased without shortening the time between tool sharpening—three hours.

With coolant temperatures averaging 125° F. the first machine was producing these nuts out of ¾ in. hex stock at a four-second cycle, while the second machine, using 1 in. hex stock, operated on a seven-second cycle.

Installation of the refrigeration unit held coolant temperatures to 78° F. and resulted in new operating cycles of three seconds for the first machine and four seconds for the second machine, with the same life for the tools. This meant an increase in production of 25% and 40% for the two machines, respectively.

It should be noted in this connection that while properly cooled cutting oil can permit an increase in production rates with no shortening of life of the cutting tool, a plant could maintain the same production rate but lengthen considerably the life of the cutting tool.

PORTABILITY A HELP

Gray-Mills claims several advantages for their model 400 units, among which is the portability feature, permitting the units to be moved from machine to machine, as the necessity arises. The company, however, has installed central station systems for cooling cutting oil.

One large system has been installed in the Madison-Kipp Co. plant located at Madison, Wis. Here cutting fluid for 20 automatic screw machines is cooled by a central unit located on the floor directly above. A 25-hp. condensing unit supplies refrigerant to cold plates installed in a 1,500 gallon tank.

Individual coolant pumps on each of the 20 screw machines deliver used cutting fluid to the tank on the floor above where it is cooled. The oil returns to the machines by gravity.

A. Lilligren of Madison-Kipp reports that this installation has resulted in an overall production increase of 10%, which is exceptionally good in view of the fact that the production was already unusually high, declares Raymond Hollis, sales promotion manager of Gray-Mills.

A general improvement in working conditions at the Madison-Kipp plant has also been noted, due to the decrease in oil temperature and lower vaporization, it is said.

Tests to determine the effect of cutting fluid temperatures on cutting tool life, cutting speeds, chip formation, and other factors were recently conducted for Gray-Mills Co. by O. W. Boston, W. W. Gilbert, and R. E. McKee of the department of metal processing of the University of Michigan, and reported in a paper presented before a meeting of the American Society of Mechanical Engineers.

A Gray-Mills refrigerating unit was hooked up to a tool lathe and operated to hold two types of cutting fluids at certain temperatures to test the results. A sulpho-chlorinated petroleum oil served as one cutting fluid for the tests, the other cutting fluid being an emulsion of one part of a standard soluble oil and 20 parts of distilled water.

Results of the tests indicate, for example, that the cooling effect of a 1-20 emulsion is greater than oil at a cutting speed of 135 f.p.m. at all temperatures above 85° F., while oil is superior to emulsion as a coolant at temperatures between 60° and 85° F. Below 60 F. the emulsion is superior because of the extremely high viscosity of the oil at low temperatures, the investigators said.

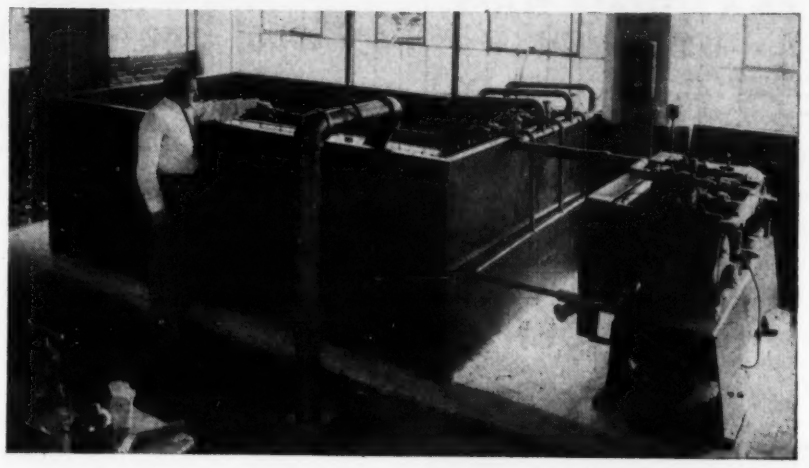
In connection with the report of this investigation the magazine *Screw Machine Engineering* has this comment to make:

"While coolant mediums are shown to be of definite value in maintaining lower cutting temperatures, a supplemental mechanical cooling apparatus introduced into the coolant circuit is demonstrated as a practical aid in maintaining the cutting fluid at a lower temperature and a definite factor in increasing tool life as a result of the controlled lower temperature. Longer tool life, better finish, and high cutting speeds are constant goals of this industry."

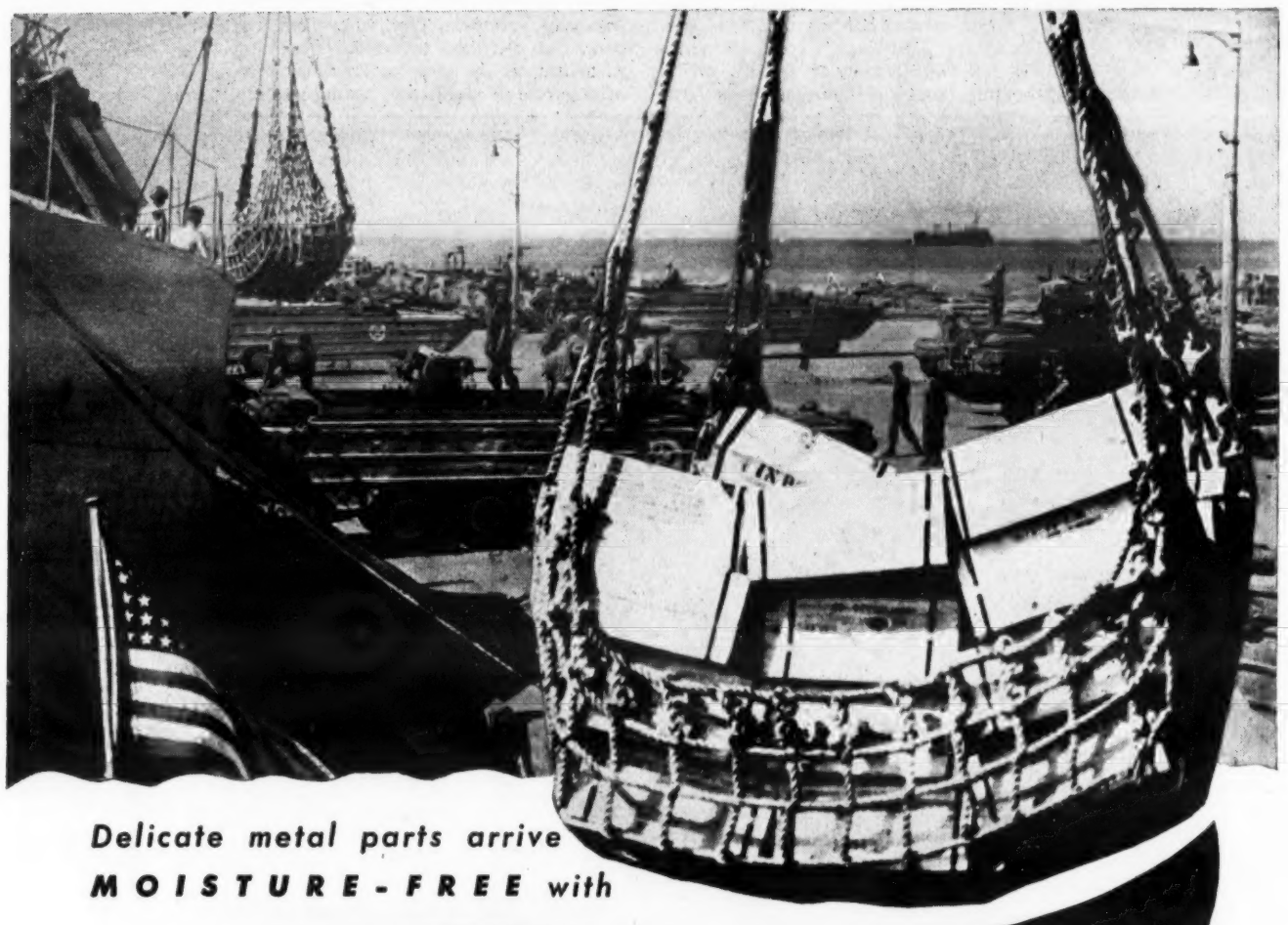
The chief purpose of the Gray-Mills units is for refrigerating coolants, but they can be readily used for other industrial purposes, it is pointed out. Quenching oils, for example, may be held to low optimum temperatures through use of these refrigerating units.

Proper temperatures are also important for hydraulic oils, which tend to break down in viscosity under long hours of operation, or in warm climate. Refrigeration can be employed to keep hydraulic oils at the proper temperature and viscosity, the company declares.

Central System Supplies 20 Screw Machines



Several advantages resulting from the portability feature are claimed for the Gray-Mills unit, but the company has also installed central systems such as the above, where the 25-hp. condensing unit at the right cools cutting oil in the 1,500-gallon tank through cold plates. Coolant is pumped from 20 automatic screw machines on the floor below up to this tank in the Madison-Kipp Co. plant, Madison, Wis., where it is brought down to the proper temperature before being returned by gravity to the machines below.



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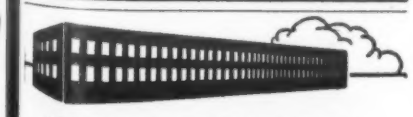

WAR INDUSTRIES NEED REFRIGERATION

The use of refrigeration in industry has been greatly accelerated by the war. In peacetime this expansion may logically be expected to continue. Write for literature.

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ICE & STORAGE PLANT
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Large cold storage Warehouse, separate modern ice plant, large retail business, garage, coal unloading bins, located on P.M. railroad siding. Plenty of land for expansion. Business in operation over 20 years. Price $35,000.00. For details,

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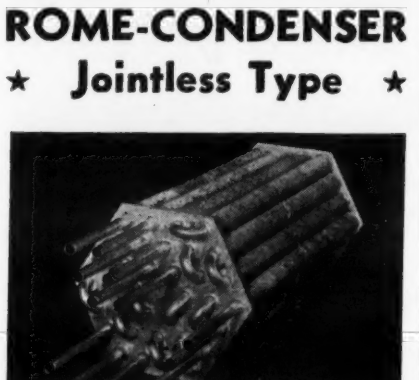

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Westinghouse Awaits 'Go-Ahead' on New 3-Model Line of Upright Home Freezers

MANSFIELD, Ohio—Upright type home freezers similar in appearance to household refrigerators will be produced for the city and rural market by Westinghouse Electric Appliance Division shortly after civilian production of electrical appliances is resumed, announces T. J. Newcomb, sales manager.

With front opening doors and sectional inner doors for easy food storage and removal, the new home freezer will be produced in three models, starting with 6-cu. ft. size to meet both urban and farm requirements. The freezing and storage functions will be handled separately in all three models.

"This upright design, in contrast to the horizontal models now commonly in use in food stores, will make the new home freezer the companion piece to the household electric refrigerator in size and finish and will provide the same reach-in convenience of the refrigerator," declared Mr. Newcomb.

"Since the cabinet will occupy no more floor space than a refrigerator of comparable size, it can be located in the most convenient place in the home," he added.

Sectional inner doors and shelves will make it possible to select specific foods from an individual section of the cabinet without disturbing food arrangements or temperatures in other sections, pointed out Mr. Newcomb. Storage compartments will be maintained at 0° F., while freezing surface temperatures will range from -10° to -20° F.

"Defrosting will be as easy, but far less frequent than defrosting an electric refrigerator, and it will not be necessary to remove foods from the storage sections," said Mr. Newcomb.

"Actual home tests of the new home freezers show that users open their cabinets on an average of only once or twice a day, or less in a month than the average domestic refrigerator is opened every day, and defrosting therefore need be done only once every six to nine months."

The new upright home freezer, will, like the Westinghouse household refrigerator, be powered by a hermetically sealed refrigerating system.

"Our home freezers," continued Mr. Newcomb, "are tested in the laboratory under home conditions for both mechanical performance and ability to freeze and store foods. Some of the engineering tests on the cabinets are conducted in special copper-lined humidity rooms. The refrigeration mechanism itself is being subjected to rigid tests in a soundproof room mounted on giant springs at our East Springfield, Mass., plant, where units for all home freezers will be built."

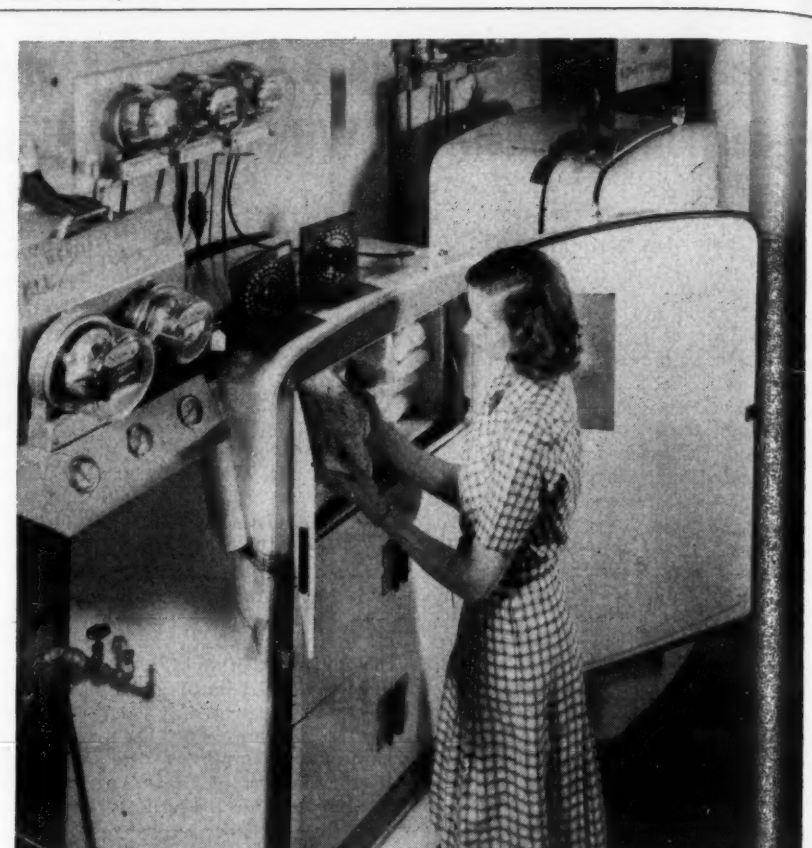
Freezers are being tested "from the homemaker's point of view" by the Westinghouse Home Economics Institute, under the direction of Mrs. Julia Kiene, which is preparing information on how to freeze, store, and package fresh and cooked foods, and care for the freezer, according to Mr. Newcomb.

Every package of food placed in a freezer is weighed when it is put in and when it is taken out to see whether weight losses occur due to improper wrapping, according to Mr. Newcomb. A detailed monthly report by the institute includes freezing rate curves, processing records on foods frozen, a summary of products frozen, and comments on the food removed from a freezer. Comments also cover taste and appearance of foods when thawed and after cooking.

Continuous recordings of power consumption, actual operating time of the refrigerating mechanism, a count of the number of door openings, and the total overall time the outer door is open are taken for use of the engineering department.

Tests by the engineering department include a complete survey conducted in sealed, copper-lined humidity rooms to insure the cabinets' performing well and maintaining their appearance in all kinds of climates, according to Mr. Newcomb. Combinations of temperatures up to 110° F. with relative humidities up to 85% are produced in this test room, which is covered with 4 inches of insulation on the outer walls, ceiling, and floor.

"At East Springfield, in a soundproof room, mounted on giant springs in accordance with the floating principles used in the construction of radio studios," continued Mr. Newcomb, "the noise made by the refrigerating mechanism is studied by amplifying the sound."



Resembling the conventional refrigerator in outward appearance, the new Westinghouse upright home freezer has sectional inner doors for storage and freezing compartments. Miss Jane Schleicher of the Westinghouse Home Economics Institute is examining food during a laboratory test.

Improved **PACKLESS VALVES**

"Simplicity" Packless Valves

- ...have round hand wheels for easy hand grip
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This Weatherhead product is an outstanding example of the engineering "know-how" with which we have endowed all our refrigeration parts. The "Simplicity" Packless Valve was designed-in-use to insure economical long life and trouble-free operation. This product is available in a wide variety of sizes, both flared and solder types.

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MR. MANUFACTURER, ARE YOU ON THE SPOT FOR NEW IDEAS?

PERHAPS we can help you... Are you on the lookout for improvements that will make it easier for you in fast postwar competition?

Do you find new refrigeration developments within your business difficult because of the pressure of war work?

Do you find it impossible (as most of us do) to satisfactorily carry out three or four full-time jobs at one time?

In other words, are you on the spot? If you are, we may have an answer for you.

To meet the coming large postwar market, Tecumseh has designed units that fulfill the requirements of the smallest enclosures for apartment use up to room size storage units for farms, restaurants, hotels and large institutions.

We are manufacturing the finest type compressors and condensing units on the market today as a result of high precision machining processes and our engineering department is staffed with well seasoned refrigeration men who are ready to assist you if you'll just say the word.

Why not write us right now for further information?

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Reconversion Chairmen For Industry Named By WPB Officials

WASHINGTON, D. C. — Appointment of reconversion chairmen for some 100 industries, including refrigeration and air conditioning, has been announced by the War Production Board to facilitate "the changeover from military to civilian production whenever it can be done without detriment to war production."

F. M. Mitchell is reconversion chairman for domestic mechanical refrigerators, and C. M. Stuart is chairman for all other refrigeration and air conditioning.

Other reconversion chairmen are: Thomas L. Craig, domestic laundry equipment, vacuum cleaners, sewing machines; Walter Jackens, commercial electrical heating or cooking appliances; Vernon K. Perkins, domestic electrical cooking or heating appliances; Ben H. Firth, domestic electrical appliances other than cooking or heating.

F. L. Williams, domestic ice refrigerators; Harold L. Wittenberg, food preparation and serving fixtures, commercial and domestic; Howard L. Clary, clocks; H. W. Cornelius, Jr., fans (not propeller type), blowers and exhausters, dust collecting equipment (not including sheet metal appurtenances; A. C. Seward, heat exchangers; Edward Thornhill, metallic and flexible tubing and hose.

The chairmen will advise and consult with their various industries on problems affecting machine tools, directly in Washington, equipment, construction, and materials for reconversion, and should be consulted on all reconversion problems, advises WPB.

WPB cautioned, however, that it is not within the agency's field of action to find the solution of all of industry's problems, but that industry must use its own initiative.

Maximum Prices Set On Amana Freezers

WASHINGTON, D. C.—Maximum prices for Amana farm and home freezers have been set by MPR 188, Order 3788, issued recently. The order also establishes maximum amounts allowable for freight and crating charges.

The maximum net prices f.o.b. Amana, Iowa, cover the 5 cu. ft. and 9-cu. ft. models. The former, listed as Model 50, may be sold to distributors for no more than $140, to dealers for no more than $168, and to consumers for no more than $280. Parallel figures for Model 90, with a capacity of 9 cu. ft., are $180, $216, and $360.

These maximum net prices, the order goes on to say, are subject to the discounts and allowances and service clauses that each seller used in comparable instances during March, 1942.

Actual freight charges necessary to delivery may be added, the order states, so long as the addition does not exceed the lowest common carrier rates. Crating charges actually paid similarly may be added, but the amount added must not exceed $4 or $6, respectively, for the two models.

SWPC To Loan For Civilian Production

WASHINGTON, D. C.—Hundreds of small manufacturers, making thousands of essential civilian products, will now be able to obtain loans from the Smaller War Plants Corp. under new policies adopted by the corporation, reports Maury Maverick, chairman.

Small plants also will be able to obtain loans more easily and quickly under the two-fold liberalized program, Mr. Maverick said.

By unanimous vote of its board of directors, SWPC has provided:

(1) Regional loan agents may make loans for war or "essential civilian production" up to $50,000 without awaiting Washington approval, and may make loans up to $100,000 where banks participate for 20%.

(2) All products on the Relative Essentiality List of the Office of Civilian Requirements of the War Production Board, will be considered as "essential civilian production," and manufacturers of these products will be eligible for SWPC loans. Products not under the jurisdiction of the Office of Civilian Requirements but on WPB's National Production Urgency List also will be considered essential, and SWPC loans may be made for their production.

Dennis & Uhley Form Firm

LOS ANGELES—Central Refrigeration is the firm name under which Alex Dennis and Aloysius J. Uhley have published a certificate that they are conducting business at 2163 West Washington Blvd., Los Angeles.

Lowell Genebach Heads United Steel & Wire

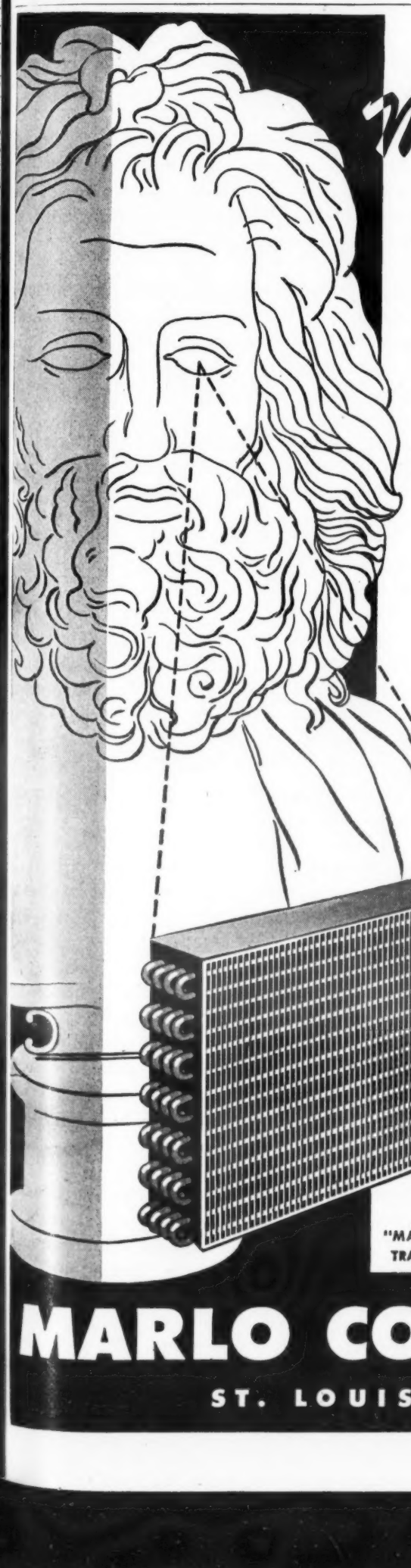
BATTLE CREEK, Mich. — Lowell B. Genebach has been elected president and general manager of the United Steel & Wire Co. here. He succeeds George J. Genebach, former president, who died recently.

Mr. Genebach has been closely connected with electric refrigeration industry through the sale of refrigerator shelves and baskets which are made by his company.

Pringey, Cleveland Council Head, Is Dead

CLEVELAND—Glenn B. Pringey, president of the Cleveland Refrigeration Council, died here recently.

Mr. Pringey, founder of Lighthouse, Inc., refrigeration and air conditioning concern at Carnegie Ave. and E. 70th St., spent 27 years in the refrigerating industry. He began his career in the refrigeration field in his native Illinois, continuing it in Indiana before coming here.



Meet Mr. Eupalinus...

THE LEADING REFRIGERATION ENGINEER OF 625 B. C.

To conduct and cool the water supply of his Grecian home town, he bored a 4200-foot pipe channel through a mountain!

Modern heat transfer engineers know something far better than bare pipe for cooling: *FIN* coils transfer heat much more efficiently.

It will pay you to install modern MARLO Fin Coils for:

Greater efficiency • Smaller size
• Lighter weight • Lower cost

May we send you our Blast Coil Bulletin?

Marlo Heat Transfer Surface

Ball-Bonded Blast Coils—Cooling and Heating • Air Conditioning and Refrigeration Apparatus • Industrial Blower Units • Unit Coolers. • Evaporative Condensers and Coolers • Low Temperature Apparatus.

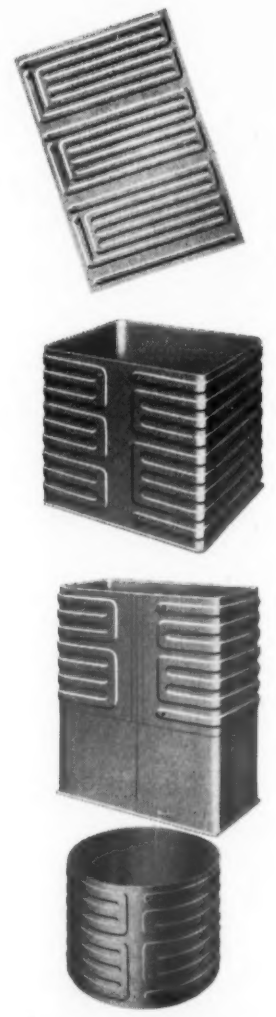
"MARLO MEANS HEAT TRANSFER EQUIPMENT"

MARLO COIL COMPANY
ST. LOUIS 10, MISSOURI

ECONOMICAL PERFORMANCE

Stangard Prime Surface* Cold Plates . . . soundly engineered and precision manufactured . . . give the height of refrigerating efficiency at the lowest possible expenditure.

Low in first cost and trouble-free in operation, the economical performance of Stangard Prime Surface Cold Plates represent a worthwhile investment for locker plants, display cases, food counters, soda fountains, trucks, liquid coolers, ice cream cabinets, farm milk coolers, farm freeze cabinets, frosted food refrigerators, beverage coolers, rivet chillers and low temperature test rooms.



*No intermediate factor between refrigerant and contact surface.

THE STANGARD DICKERSON CORPORATION
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LITTLE "STAN," THE STANGARD MAN!

STANGARD PRIME SURFACE COLD PLATES

STANGARD KNOWS REFRIGERATION

They'll Do It Every Time . . . . By Jimmy Hatlo

YESTERDAY THE BOSS RETURNED FROM A MONTH'S STAY IN FLORIDA WHERE HE WAS RECOVERING FROM A SLIGHT COLD ...
ALL BETTER NOW, EH, B.M.? THAT'S BULLY. THAT LITTLE COUGH HAD US WORRIED...
WONDERFUL TO HAVE YOU BACK, CHIEF ... BUT YOU SHOULD HAVE TAKEN ANOTHER MONTH...
YEH-YEH- THAT'S RIGHT, BOSS...YOUR HEALTH COMES FIRST...
JIMMY HATLO
GEN. MANAGER
TODAY, POOR OLD TREMBLECHIN TOTTERED IN AFTER BEING OUT ONLY THREE DAYS WITH A BROKEN ARM...
Thanx to WAYNE FAHR, AKRON, O.
YOU PICKED A FINE TIME TO BLUNDER INTO A TRUCK! WHAT DID YOU DO WITH THE SPECIFICATIONS ON THIS McSNEE DEAL?!
DO YOU REALIZE YOU'VE BEEN HOLDING THAT CONTRACT UP THREE DAYS?
...REMINDS ME... I BROKE AN ARM IN MY FOOTBALL DAYS AND PLAYED FOR 3 QUARTERS WITHOUT KNOWING I WAS HURT!
1ST JUNIOR EXEC.
5-10
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SUPPORT THE 7th WAR LOAN . . . BUY AND KEEP . . . WAR BONDS

THE PHILCO FREEZER CHEST

will be the product of pioneering research and experience

IN MARKETING the Philco Freezer Chest, after Victory, Philco enters the field with an extensive background of pioneering research and experience. Before the war, Philco recognized the growing importance of frozen storage by being the first to introduce a complete line of refrigerators with a full size, separate Frozen Food Compartment. And the war years have confirmed the soundness of Philco initiative in refrigerator engineering and merchandising.

The Philco Freezer Chest of the future will reflect the lessons of this pioneer research and experience. It will be a product of sound engineering and design. It will offer you a line fitted to the merchandising needs of the market . . . a model and size for every type of home.

This is what the Philco Freezer Chest franchise offers you after the war. The benefit of Philco experience in quality design and manufacture and Philco understanding of what it takes to make a product *saleable*. Plus . . . the public acceptance of the Philco name, known for leadership in millions of American homes.

PHILCO *Famous for Quality the World Over*

Trade Mark registered U. S. Patent Office; Est. 1926

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AIR CONDITIONING AND REFRIGERATION News

BUSINESS NEWS PUBLISHING COMPANY • 5229 CASS AVENUE, DETROIT 2, MICHIGAN

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F. M. COCKRELL, *Founder*

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VOLUME 45, NO. 5, SERIAL NO. 846, JUNE 4, 1945

Support H. R. Bill 2652!

TARIFFS have probably been the one most controversial political issue in American history. They have had their good and bad features; they can no more be condemned *in toto* than they can be accepted unblinkingly as the means by which America became great.

It is not our purpose here to discuss the merits or demerits of tariffs from an historical perspective. All that interests us at this point is the fact that the future of the air conditioning and refrigeration industry is vitally affected by the Reciprocal Trade Agreements program.

Refrigeration and air conditioning comprise one industry which is peculiarly American. We supply the world's needs. We have the know-how, the manufacturing facilities, and the advanced engineering techniques to maintain that exclusive position *if we aren't stopped by tariff barriers.*

H. R. Bill 2652, if passed, will provide the administration with leverage by means of which foreign trade barriers may be reduced, or at least held to their present levels.

In addition, by means of selective lowering of our own tariff imposts, the purchasing power (dollar supply) of our customers will be increased.

They can't buy our unique refrigeration and air conditioning equipment if they can't get hold of dollars. And the only way they can get dollars—unless we're going to embark on a world-wide WPA give-away program, God forbid—is to sell us something they produce.

If our customers can't break through our tariff walls, we won't be able to break through theirs.

Defeat of H. R. 2652 might start the world out again on another dizzy race to raise tariffs, impose import quotas, ban certain imports, set up uneconomic producing units—and here we go off to the wars again, boys.

Passage will mean—at least, insofar as the contribution of this industry is concerned—rising levels of protective food consumption abroad, better living standards for all, happier peoples, and such miscellaneous boons for our foreign friends as sanitary drinking water, the introduction of American soft drinks and frozen foods, and comfortable working conditions in the tropics.

We're all pretty busy to do much about trying to influence the vast movements going on in the world these days—movements which will affect our entire basis of future business and personal operations. A good many of us can't even figure out what in blazes is going on, most of the time.

But here's something we do understand, and something which is right down our alley. Take five minutes today to write your Congressman that you strongly urge passage of H. R. 2652.

Refrigeration Service Engineers

PERFORMING OUTSTANDING MAINTENANCE JOB

Today, in towns all over America refrigeration service engineers are doing an outstanding maintenance job of keeping refrigerated display cases, ice cream cabinets, food storage lockers and the countless other applications of refrigeration running smoothly and efficiently.

On call the refrigeration service engineer performs his task, oftimes while the city sleeps. Thousands of dollars he has saved retailers, countless thousands of pounds of precious food he has prevented from spoiling.

These men rely upon A-P DEPENDABLE Refrigeration Controls. They use A-P DEPENDABLE Refrigeration Controls to help them perform their important task. As many of them write "I use a lot of A-P Controls and never had one fail me yet."

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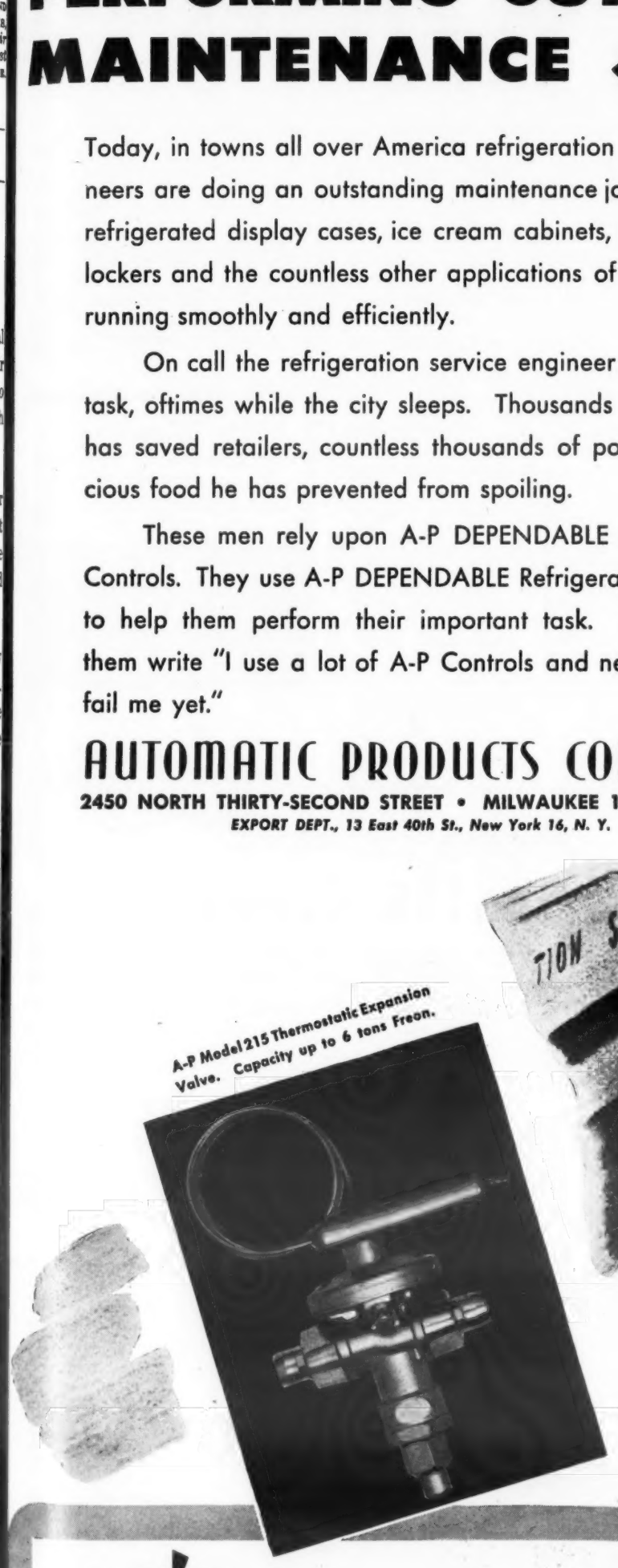


DEPENDABLE *Refrigerant Valves*

Stocked and Sold by Good Refrigeration Jobbers Everywhere • Recommended and Installed by Leading Refrigeration Service Engineers

More important than ever in the war on moisture

Order from your jobber

IMPERIAL *TORPEDO* DEHYDRATOR

One piece streamlined shell—fewer joints—no soft solder —less chance of leakage. Copper and brass construction. Packed with "Silica Gel". Built in sizes up to 7 h.p.

IMPERIAL BRASS MFG. CO., 565 S. RACINE AVE., CHICAGO 7, ILL.

WHEN PEACE COMES

KOCH

WILL AGAIN PRODUCE COMMERCIAL REFRIGERATOR EQUIPMENT FOR CIVILIAN USE

NOW SOME SELF-CONTAINED REACH-IN REFRIGERATORS ARE AVAILABLE FOR THOSE WHO CAN QUALIFY . . . . . .

Write — Wire — Phone

KOCH REFRIGERATORS

NORTH KANSAS CITY . . . MO.

Big Locker Plant In Ithaca, N. Y. To Serve As Research Center For Nutrition Studies

Gov. Dewey Sees Solution To Many Problems Possible In Program of Industry, Farmers and State

ITHACA, N. Y. — Extensive research in nutrition, with special studies of food freezing, will be conducted by Cornell University's School of Nutrition at the new "Mother Zero" freezer locker plant recently opened here. New York's Governor Thomas E. Dewey gave the principal address at dedication ceremonies for the plant's opening.

The research program is sponsored by several companies in the refrigeration industry, utilities, farm cooperatives, and the state of New York.

Following a study of locker plants in 15 states, the Cooperative Grange League Foundation constructed the "Mother Zero" plant to "combine the best features" of existing lockers with some experimental projects. There are 932 individual lockers in the plant, some drawer type with 4.6-cu. ft. capacity, and other door type of 5.4-cu. ft. capacity, all of which have been rented.

H. L. Shurter manages the plant, which is operated by the Cooperative P&C Family Foods. Other employes include a stenographer and general office assistant, three meat cutters, three girls for wrapping foods, and a storage man on continuous duty in the locker room. On its busiest day since the opening, the plant processed and stored 4,182 pounds of meat.

Service facilities include a fruit and vegetable processing kitchen; a room for processing hogs and rendering lard; a poultry room where the product is slaughtered, scalded, automatically picked, eviscerated, and wrapped for storage; a meat storage and ageing cooler; a pre-chill room used for meat freshly slaughtered and not properly cooled when delivered; a room where brine is pumped into hams; a curing room for hams and bacon; a smoke house; and a cooler for temporary storage of smoked meats.

The project will also have a slaughtering plant, to be located just outside Ithaca, to handle custom work for those desiring to have their animals slaughtered and prepared for storage. The plant will have facilities for slaughtering up to 20 head of cattle daily.

SPONSORS OF PROGRAM

Sponsors of the nutrition research program which Cornell University will conduct at the plant include the following private companies and utilities, in addition to the state and cooperatives:

Buffalo Niagara Electric Co., Buffalo; Carrier Corp., Syracuse, N. Y.; Central Hudson Gas & Electric Co., Poughkeepsie, N. Y.; Central New York Power Corp., Syracuse, N. Y.; Consolidated Edison Co., New York City; Emil Steinhorst & Sons, Utica, N. Y.; Long Island Lighting Co., Mineola, N. Y.; New York Power & Light Corp., Albany; New York State Electric & Gas Corp., Binghamton, N. Y.; Niagara, Lockport & Ontario Corp., Buffalo; Philco Corp., Philadelphia; Rochester Gas & Electric Corp., Rochester, N. Y.; and Sears, Roebuck & Co.

In his dedication speech Governor Dewey praised highly the locker industry and the development of frozen foods and home freezers. Referring to the "Mother Zero" plant, he declared:

"This plant is more than a community locker. It is an experiment station. It is a pioneer, blazing a new trail. It is the symbol of new and better processes in agriculture, in nutrition, and in the health of the American people. . . .

DEWEY'S EXPERIENCE

"Down on my own farm we bought a farm freezer about three years ago," continued Governor Dewey. "We all felt that this was an experiment and a novelty. Today it is a necessity. It is just as much a part of our living as the refrigerator or a modern bathroom.

"A year ago last Thanksgiving," he explained, "our whole family had expected to go to the farm but finally found we couldn't make it. Did that mean that any food went to waste? The turkey and the vegetables just stayed where they were in the freezer. Helen had prepared her mince pies and her pumpkin pies and instead of baking them had put them into the freezer, ready to be baked.

"So, instead of eating them at Thanksgiving, we ate the same pies at Christmas and they were just as good as if they had been made that day. All this, of course, is in addition to the storage of meats and las

(Concluded on next page, Col. 1)

Complete Line of HERMETIC Self-Contained OPEN TYPE and REMOTE TYPE *Refrigerating Units* ⅛ TO 20 H.P.

UNIVERSAL COOLER

MARION OHIO — BRANTFORD ONTARIO

WE SELL TO MANUFACTURERS ONLY

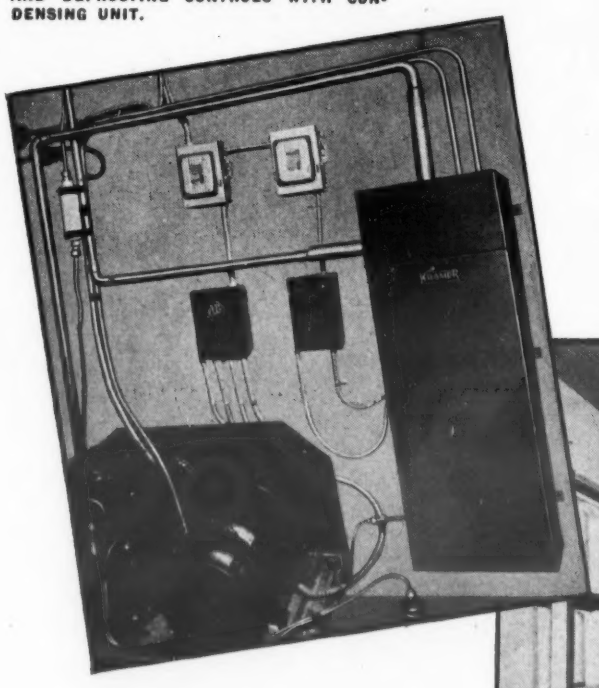
UNIVERSAL COOLER CORPORATION

Automatic Refrigeration since 1922

THERMOBANK

by KRAMER

INSTALLATION SHOWING THERMOBANK AND DEFROSTING CONTROLS WITH CONDENSING UNIT.



With the Thermobank a low temperature system is just as automatic as a 40° system.

NO ELECTRIC HEATERS
NO BRINE SPRAY
NO WATER SPRAY

Write for Bulletin T-V-345 N-3

THERMOBANK EVAPORATOR INSTALLATION IN MINUS 20° F. ICE CREAM HARDENING ROOM.

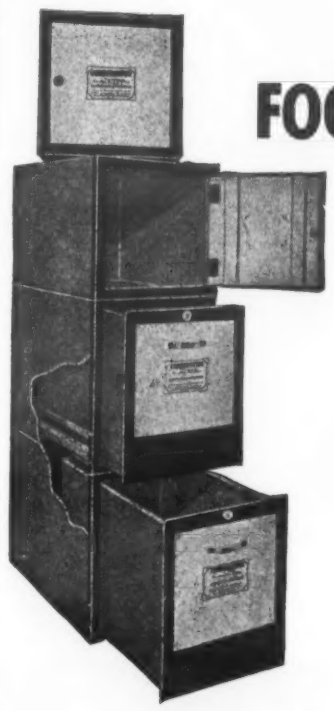
KRAMER TRENTON COMPANY

Trenton, New Jersey

Since 1935

Again MASTER Comes Thru

When the Operators needed new momentum to arouse more interest and more patrons, MASTER produced the "2 in 1" Double Door Locker, making two customers sprout where only one grew before. That's just another reason why you should hitch your wagon to MASTER foresightedness by ordering



MASTER FOOD CONSERVATORS

They are solidly built of STEEL by men who pioneered the industry. Their features assure profitable and economical Locker plant operation. It costs no more to get the "Choice of the Industry."

Immediate Shipment

Our greatly expanded facilities now in operation make possible *immediate delivery* on your requirements. Write, phone or wire your order today.

Endorsed by and sold through distributors of refrigeration and insulation.

MASTER MANUFACTURING CORP.

121 MAIN STREET — SIOUX CITY 4, IOWA

Member of Frozen Food Locker Manufacturers and Suppliers Ass'n. organized for your protection.

Over 700,000 Master Food Conservators in Use

Home Freezers & Locker Plants Can Provide Better Food & End 'Surpluses,' Dewey Says

(Concluded from preceding page)

summer's vegetables. We are still eating out of last summer's Victory garden. . . .

"Now is all this available only on a farm? By no means. We already have central locker plants in many communities. As a result of the research during the war, much of which was conducted right here at Ithaca. I look for the day when everyone can have a freezer right in his own kitchen.

"There are already designed and ready for production electric refrigerators with freezing units and zero storage units built in. These two-temperature refrigerators can be used not only to store frozen foods but to freeze them, Governor Dewey emphasized.

WHAT HOUSEWIVES CAN DO

"When the supply is great and prices are best, housewives everywhere will be helping themselves and their family budget by putting in the freezer what they will eat next week, next month, or next year. They will also, as they provide better eating for their family and save money, be providing a more stable market for the products of our farms and contributing to a continuing stability of production and of national income.

"And let me make it clear, this is no idle dream. This is tomorrow's business. It is underway today. At this 'Mother Zero' plant—this great cooperative experiment in scientific development by the farmers, the scientists, and the residents of our state, we are bringing it ever closer. By the end of the war with Japan, it can become a reality with the actual production of the freezing units we need and the ever improved production of the agricultural products to fill them.

"This plant is a symbol of some of the new thinking we need. We know that people cannot buy food unless they have the money and the purchasing power. But it has been too long ignored that just the processing and distribution of food can contribute to a mighty increase in the purchasing power of the nation. It can also contribute to the stability of prices to the farmer and the stability of a good food supply for the rest of our people. . . .

LOOK TO NEW INDUSTRY

"So now we look to a new industry for some of the new thinking we need," continued Governor Dewey. "I look to the day when we will never again think of those tremendous surpluses of years past as just something to be destroyed or stored. When we store grain it slowly deteriorates. But if we feed part of it to cattle, fatten them up, slaughter them, and freeze the meat, we have used up that part of the surplus. We have kept men busy and employed in preserving it.

"We have an important, new, additional factor which provides greater industrial participation in agriculture, greater stability of employment, and a new means of stabilizing production from year to year.

"But we still need to know a lot more. Fresh fruits, vegetables, and milk are perishable. They spoil quickly. Fruits and vegetables are not at their best before they mature. And unless they are kept properly, they will not stay good very long. Quick freezing will provide at least part of the answer to better eating, better disposition of surpluses, and better distribution.

"But we need to know what products are likely to be processed in volume by this method. Where should quick-freezing plants be located? How much volume of business is necessary to justify a community locker? What foods should we preserve by other methods? How expensive will it be to ship frozen products long distances? How may they be used to best advantage in the home?

"From the farmer's point of view we must learn what varieties of fruits and vegetables can best be frozen. The whole field of distribution and merchandising of frozen products must be studied. We will find the answers to many vital questions here in Ithaca.

"When we have made the developments which will flow from this community experiment station, we can see the means by which part of our future will actually come to pass. Nobody ever heard of building cold storage plants for oats or transporting oatmeal by air. Nobody ever buys a refrigerator to preserve cereals.

WILL AID EMPLOYMENT

"But we shall be building huge frozen storage plants for the grains we have converted into meat. We shall be transporting frozen foods in quantity by truck, rail, water, and by air. To the farmer, that will mean a greater market, a more secure market for year-around distribution, and a much more stable price. We shall further our national goal of full employment by the distribution of better food for a better diet."

HUBBELL YODER REFRIGERATION PLATES

THE HUBBELL EVAPORATOR PLATE
Every square inch of surface is prime heat pick-up.
For Frozen Food Lockers, Deep Freeze Cabinets, Milk Coolers, Fruit and Vegetable Counters, etc.
Write for complete information. It will pay you.
ENGINEERING SERVICE INC.
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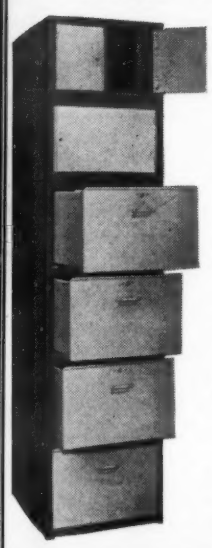
Sole Agents for
YODER REFRIGERATION INC., Manufacturers

A-S-E FROZ-N-FOOD LOCKERS

NEW PROFITS FOR YOU



Sell Froz-n-Food Lockers. They're the preferred lockers that assure you more profits. And, at the same time, bring customers complete satisfaction. Note their many special features, such as: glide-easy drawer action, long lasting steel construction, beautiful two-tone finish, complete factory assembly—these and other features mean a quick selling line and a profitable line.

Write A-S-E for additional information.

ALL-STEEL-EQUIP COMPANY, INC.
450 GRIFFITH AVE. AURORA, ILL.

Member of the National Refrigeration Supply Jobbers Association
Your refrigeration parts and supply house in Central New York and Northern Pennsylvania
TED GLOU
CENTRAL SERVICE SUPPLY CO.
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VISOLEAK FINDS 'EM

RED SPOT FURNISHES CLUE TO REFRIGERANT LEAK DETECTION

VISOLEAK is a finely-treated colored refrigerant oil which penetrates every nook and cranny of the system. The leak is indicated by a red stain – similar to the discoloration on a carburetor in which ethyl gasoline has been used. Can be used *safely* and *effectively* with any type of refrigerant. See your jobber today. If he has not stocked Visoleak write for complete information.

WHOLESALE PRICES		CASE LOTS	
4 ounce bottle	$ 1.00	48 bottles	SAVE 10% ON CASE LOTS
8 ounce bottle	1.75	24 bottles	
1 pint bottle	3.00	24 bottles	
1 quart bottle	5.00	12 bottles	
1 gallon can	16.00	6 cans	

WESTERN THERMAL EQUIPMENT CO.
5141 ANGELES VISTA BLVD.
LOS ANGELES 43, CALIF.

Over 75 YEARS REFRIGERATION EXPERIENCE

is on the record of the 5 Key men in the West's most modern Supply Jobber and Equipment Distributor.

WHAT DOES THIS MEAN TO YOU?

Simply This! If you are a dealer, contractor, or service operator in our area . . . . design, engineering, sales, and financial assistance in ADDITION to a COMPLETE source of supply.

If you are a manufacturer of equipment, parts, or supplies . . . . an alert experienced organization ready and able to promote finer products for the good of the industry.

UNITED COMMERCIAL SALES CO
Refrigeration - Air Conditioning - Products - Parts and Supplies
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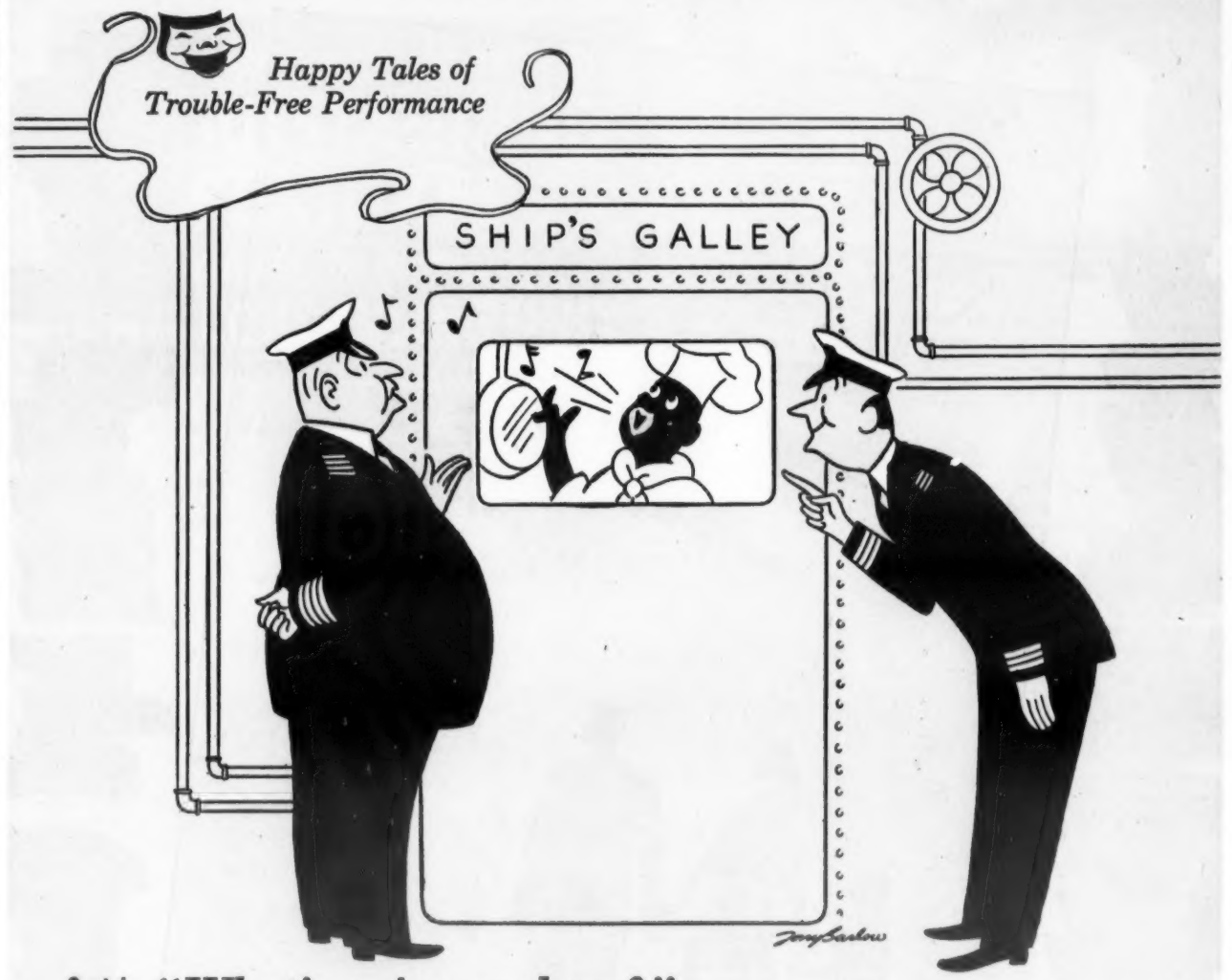
Specify DOLE Vacuum COLD PLATES
Maximum Refrigeration Efficiency for all REFRIGERATION PURPOSES
DOLE REFRIGERATING COMPANY 5910 NORTH PULASKI ROAD CHICAGO 30, ILL.

Happy Tales of Trouble-Free Performance

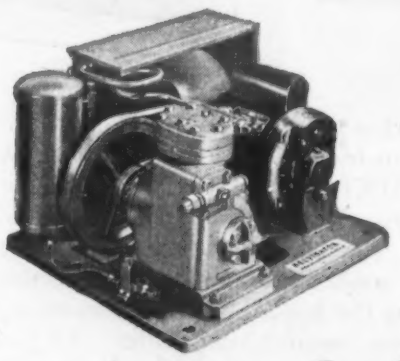


Captain: *"What's going on here?"*
1st Mate: *"Alamo's been bubbling ever since we equipped the galley with that new Kelvinator Condensing Unit!"*

Superior design . . . superior engineering are the reasons why Kelvinator Condensing Units for 30 years have meant *more* performance, *more* dependability, *more* economy.

That's why, when specifying condensing units, progressive service men always say *"Kelvinator"!*

Kelvinator distributors and zone offices stock a complete line of refrigeration supplies. See them for your installation material such as valves, fittings, dryers, etc.



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DIVISION OF NASH-KELVINATOR CORPORATION, DETROIT
CONDENSING UNITS SEALED • OPEN
FOR YOUR HOME—REMEMBER KELVINATOR REFRIGERATORS, ELECTRIC RANGES, WATER HEATERS AND HOME FREEZERS

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d-h Heat Exchange Equipment Sets New Performance Records

d-h engineers have designed and manufactured a complete line of heat transfer equipment whose performance in service is setting new high standards of excellence throughout the country. Included are heaters, coolers, air conditioning equipment coils . . . each with outstanding qualities that invite comparison.

They represent more than a generation of Western development. Into every d-h unit go thorough knowledge of heat exchange principles . . . expert designing for proper proportion and balance . . . experience in manufacturing quality products with the finest factory facilities.

HEXHEAT
Airplane Exhaust heater, a leader in its field

STRATA-FLO
Revolutionary type water cooler of unequalled efficiency

SPASAVER
Horizontal type air cooler first introduced by d-h

WAT-R-MISER
Evaporative liquid cooler that eliminates nine-tenths of ordinary operating costs

Busy meeting war needs today? Certainly . . . but not *too* busy to help you solve your heat exchange problem for tomorrow. Perhaps your answer is ready and waiting . . . perhaps only minor adaptation of standardized equipment is necessary. Write us about your needs.

LOS ANGELES SINCE 1905

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Use of Vapor Pressure Differential Principle To Control Humidity In Air Conditioning

By T. L. Warren, Design and Development Engineer,
The American Coils Co., Newark, N. J.*

It seems to be human nature to do things the hard way until a more simple and satisfactory method is found. Air conditioning is no exception. This is probably due to the fact that in the beginning of this fast growing industry it was well known that moisture could be condensed from the air by cooling below its dewpoint temperature, or that moisture could be added by evaporation, thus changing the humidity in order to bring about more desirable or comfortable conditions in which to live and work.

The importance of controlling the humidity can be better understood when you consider that the human body dissipates anywhere from 400 to 2,500 B.t.u., or heat units, per hour, depending on the physical activity of the individual.

This heat may be dissipated by radiation and convection to the surrounding air, provided the air is at lower temperature, or by evaporation of moisture through the pores of the body, and more likely, this heat will be dissipated by a combination of these two methods. However, various research data indicate that the greater proportion of body heat is dissipated by evaporation when the temperature of the air is above approximately 82° F. While in air at lower temperatures the greater proportion is by radiation and convection.

It is also a well known fact that evaporation of moisture can only take place in a space not already saturated with moisture. This is why it is so important to control the relative humidity or moisture content of the air if true comfort is to be maintained.

*An address before the Newark Section of the American Society of Refrigerating Engineers.

CONVENTIONAL SYSTEMS

Since the inception of air conditioning, the conventional systems were designed to pass the air over the cold surface of a coil or through a spray of chilled water to accomplish this result. Let's see what happened—slide rule engineers spent busy days figuring the heat leakage through windows, doors, walls, floors, and ceilings of various construction, as well as infiltration losses through cracks and doors.

These heat load estimates were based on the average maximum dry-bulb temperature and relative humidity for a particular locality. The heat load, thus computed, was then divided into sensible heat, which required cooling, and latent heat that required removal of moisture from the air.

It was then necessary to compute the amount of air that would have to be cooled, and the temperature to which it would have to cooled, in order to offset the sensible heat and latent heat in the correct relative proportions. This involved delving into such factors as sensible heat ratio, coil surface temperature or apparatus dewpoint temperature, coil depth, bypass factors, and refrigerant temperature. Finally, if the slide rule engineer survived all this, he was then ready to select the air conditioning equipment that would satisfy the calculated requirements.

A JOB WELL DONE

The tired engineer breathed a sigh of relief for a job well done. And why not? He had figured 95° F. outside and 80° in the space to be conditioned, and had used the right heat transfer coefficients for the particular building construction. Oh yes, and he had taken into account such factors as solar radiation, building exposure, zoning, windage, and time lag.

RESULTS WITH CONVENTIONAL SYSTEM

Eventually, the equipment was manufactured and installed, all according to the calculated requirements. And now the sad part. The equipment was placed in operation. It happened to be on one of those typical muggy summer days when the temperature was around 85° and the humidity up around 80%. To make matters worse, it was cloudy that day. Well, the room got too cold and that cold blast of air coming in at around 60° did not help. We just turned up our coat collars and finally went home with a stiff neck.

EARLY INSTALLATIONS—UNSATISFACTORY

This is why the early theater jobs were so unsatisfactory. Almost everyone has experienced that cold blast of air and the sudden shock when entering or leaving some theaters. Now, let see what happened. To start with, you will remember that the load was based on 95° DB outside and it was only 85° on this particular day so that the heat leakage was actually only one-third the amount estimated. Furthermore, it was cloudy that day so there was no solar radiation.

ANALYSIS OF RESULTS

Yes, you are probably thinking—well, why not turn off the air conditioning equipment? But don't forget that it was a muggy day with humidity up around 80%, a condition which causes more discomfort than high temperatures. If the room is to be kept at the usual comfort optimum conditions of 80° DB and 50% relative humidity, it is necessary to cool the air at least 20° in order to reach the dewpoint temperature at which moisture starts to condense. Actually, it is necessary to cool a few degrees lower, depending on the amount of excess moisture to be removed.

This cold air was just too much for the small sensible heat load. Certainly, the use of "reheat" is not the proper answer, as it is both too expensive and complicated. Furthermore, it simply adds to the refrigeration load—imposing a full load on the refrigerating equipment at a time when the acutal load may be only 50% or less.

No wonder operating costs were high and results so unsatisfactory, both of which retarded public acceptance of the true benefits of air conditioning. For it was like operating the furnace full blast on a mild temperature day and then opening the windows because it is too hot. Fortunately we can regulate the furnace and save fuel—to say nothing of keeping the little woman comfortable and in a good humor—which is well worth the price of any equipment.

CONCEPTION OF NEW METHOD

It was while building and testing low temperature test chambers that Thomas W. Binder of the American Coils Co. first conceived the idea of using the partial vapor pressure of the water vapor mixed with air as a motive power for removing excess moisture or humidity from the air.

These low temperature test cham-

(Concluded on next page)

You're going to be *babied* after these wars are over. You're going to walk into stores and work in offices and eat in restaurants where the air makes you feel like a million dollars. You'll feel like those P-38 "Lightnings" must feel that are built in factories where the air is "made up" as carefully as a doctor's prescription.

You're going to benefit from what companies like Worthington—an old hand at air conditioning—have done during the war . . . in aircraft factories, in synthetic rubber plants, in research laboratories. Air Conditioning by Worthington will someday be everywhere, more efficient and more economical.

If the place that you're in is air-conditioned by Worthington, you'll benefit especially from the fact that Worthington makes so many of the "vitals" of air conditioning and refrigeration systems—engines, turbines, condensers, compressors, pumps, valves, fittings. This means more reliable performance of machinery—whether unit conditioners or completely-engineered systems . . . machinery that is interdependent and should be integrated for the best results.

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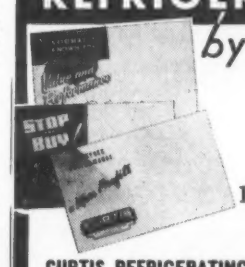

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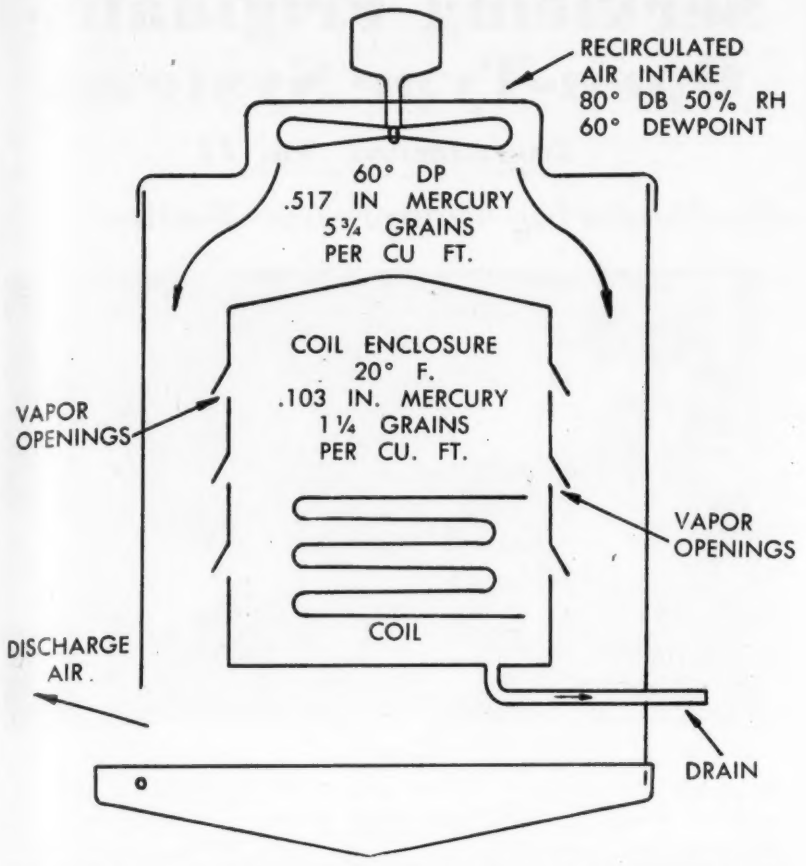
Design To Regulate Humidity Conditions



This is the design and the conditions described by Mr. Warren in the accompanying article, which explains a new concept of controlling humidity conditions in air conditioning systems.

'Comfortaire Units' Use New Concept

(Concluded from preceding page)

bers were used extensively by many leading companies for testing aircraft instruments in the furtherance of the war effort, and they could reproduce any atmospheric pressure temperature or humidity condition between the limits of -95° F. to 150° F. with barometric pressures ranging from that at sea level up to about 70,000-foot elevations.

FUNDAMENTAL LAW

It seems that back in the year 1802, some 143 years ago, a fellow named Dalton conducted some experiments by mixing air and water vapor together, and thus established one of the basic laws of thermodynamics. This law states, in effect, that the total pressure of a mixture of vapors is equal to the sum of the pressures at which each would exist if it alone occupied the whole space.

It also implied that each individual vapor behaves independently of any others mixed with it. This fundamental law was later substantiated by the experiments of a Frenchman named Regnaut in the year 1845 just 100 years ago, and forms the basis of many present day engineering calculations as well as certain patented processes such as those used in the Electrolux gas refrigerator.

In a recent article in the March, 1945, issue of *Refrigerating Engineering* magazine, Dean Goff of the Towne Scientific School of the University of Pennsylvania points out that this fundamental law is off about ½ of 1% at atmospheric pressure, which, of course, is not enough to make any material difference.

EXPLANATION OF FUNDAMENTAL PRINCIPLE

Perhaps a better understanding of this principle can be had by considering that a cubic foot of space can hold a definite maximum amount of water vapor at a given temperature, regardless of the presence or absence of any other gas or vapor, which might be mixed with it, and regardless of the pressure of these other vapors.

The fact that air is mixed with the water vapor does not matter, except for certain inter-molecular attraction and friction between the molecules. This new method of air conditioning (as covered by the Latent Cooler Patents) removes excess moisture from the air due to a difference in vapor pressure in the air as compared to the relatively low vapor pressure maintained in a coil enclosure.

TYPICAL ILLUSTRATION

To illustrate, we will draw a typical coil enclosure. Now, if a temperature of, say 20° F. is maintained in this enclosure, the corresponding water vapor pressure would be .103 inches of mercury (or .05038 lbs./sq. in.). Thus, if the enclosure has a volume of 1 cu. ft. it can hold a maximum of about 1¼ grains of moisture regardless of any air mixed with it.

This coil enclosure has a series of vapor openings around it. Now suppose we put a casing around the enclosure and a fan in the top to draw air from the room and circulate it around the enclosure.

If the air is at the usual summer comfort condition of 80° DB and 50% relative humidity, the water vapor mixed with it will have a partial pressure of .517 inches of mercury (or .2538 lbs./sq. in.) corresponding to a dewpoint temperature of 60° F. and a moisture content of about 5¾ grains per cubic foot.

According to the fundamental law governing the flow of fluids, this high pressure vapor surrounding the coil enclosure will flow through the vapor openings into the coil enclosure due to to the vapor pressure differential of .414 inches of mercury (or .203 lbs./sq. in.) and will continue to flow just so long as the vapor pressure differential is maintained. This, we have substantiated, is exactly what happens.

OPERATING CHARACTERISTICS

For an analogy, consider the flow of water through a pipe line due to a difference in pressure or the flow of an electric current due to a voltage differential. The vapor pressure differential is maintained by the throttling action of the vapor openings and by freezing the moisture on the coil surface as fast as it comes in.

Obviously, it is necessary to have the proper size vapor openings and correct amount of coil surface to maintain the vapor pressure differential, otherwise such a system would become inoperative.

This would, in effect, be similar to removing the expansion valve from the conventional type of refrigerating system, which would flood the coil and thus destroy the refrigerant pressure differential. In this case, the expansion valve feeds the refrigerant to the coil at the same rate at which it is being evaporated so as to maintain the proper pressure relation.

HIGH SIDE EQUIPMENT

A condensing unit must be used to provide refrigeration to the coil surface, and this condensing unit can be of any standard make, which has the necessary capacity requirements. However, the condensing unit should be operated on a defrost cycle by proper setting of the low pressure control so that the excess moisture, which is frozen on the coil surface, will be allowed to melt and drain off during each defrost cycle. Note that the latent heat of fusion existing in the frozen moisture supplies refrigeration or cooling during each defrost cycle.

At this point, it is well to note that the water vapor pressure differential mentioned above is sufficient to create a velocity head of about 340 feet per minute. A small amount of air will be drawn in with the water vapor due to the inter-molecular attraction and friction between the molecules. As this air will be cooled, it will pass out through the lower vapor openings, and will mix with the warmer dehydrated air before it is discharged into the air conditioning area.

Now we will let you in on a little secret. By proper design of vapor openings and coil surface, such a unit will automatically adjust itself to the true load and provide just the right amount of moisture removal and cooling for comfort. This is why we have named our unit the "Comfortaire Conditioner."

NATURAL LAWS—FAVORABLE

It is interesting to note that the very laws of nature favor this new and unique method of air conditioning. When the humidity is high the vapor pressure is high, and the moisture removing capacity of the unit increases due to the higher vapor pressure differential. Furthermore, nature has a way of stablizing temperature by evaporation of moisture from the surface of the earth and by rainfall. For this reason, we seldom get excessive temperature and high humidity simultaneously.

FLEXIBILITY AS TO LOAD

Obviously, the cooling coil has a definite total capacity. Therefore, it does more cooling on days when the temperature is high and the moisture load is light, and does less cooling on days when the temperature is mild and the moisture load is heavy, thus automatically adjusting the capacity of the unit to the true load conditions.

TYPICAL EXAMPLE

Thus, for a typical office space of about 8,000 cu. ft. (internal volume) that is to be maintained at 80° F. dry bulb and 50% relative humidity, the total cooling load would be approximately 42,000 B.t.u. per hour on a sunny day when the outside temperature is 95° F. dry bulb, and 78° F. wet bulb, which is a typical summer design condition.

Now, if the moisture load is constant, the conventional system would require this same load on a cloudy, humid day, when it is only 80° F. dry bulb and 74° F. wet bulb outside.

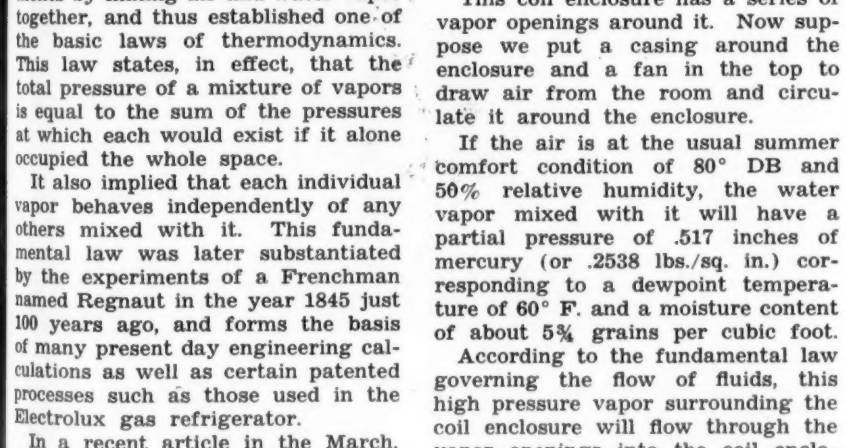
On such a day the actual load is only about 10,000 B.t.u. per hour, including infiltration and internal heat gain or about 24% of the full load requirements. If the sun is shining, the load would be approximately 21,000 B.t.u. per hour or about 50% of the load required with a conventional system.

HUMIDIFYING

In very dry climates it is necessary to add moisture to the air. For this reason, the air conditioning unit should be equipped with a humidifier designed to make up any deficiency in moisture content of the air.

So far, we have developed two models for use in small stores and shops. These units handle all recirculated air and are designed for side wall mounting. They are completely automatic in operation and are equipped with a temperature control for maintaining desired dry-bulb temperature and also with a humidistat, which is so connected that the unit will either add or remove moisture in order to maintain the desired relative humidity.

There is a main switch with pilot light for placing the unit in operation, as well as a humidity switch and a cooling switch, each of which has a pilot light so that the controls can be operated individually or together. A separate condensing unit is required to provide refrigeration to the coil surface.



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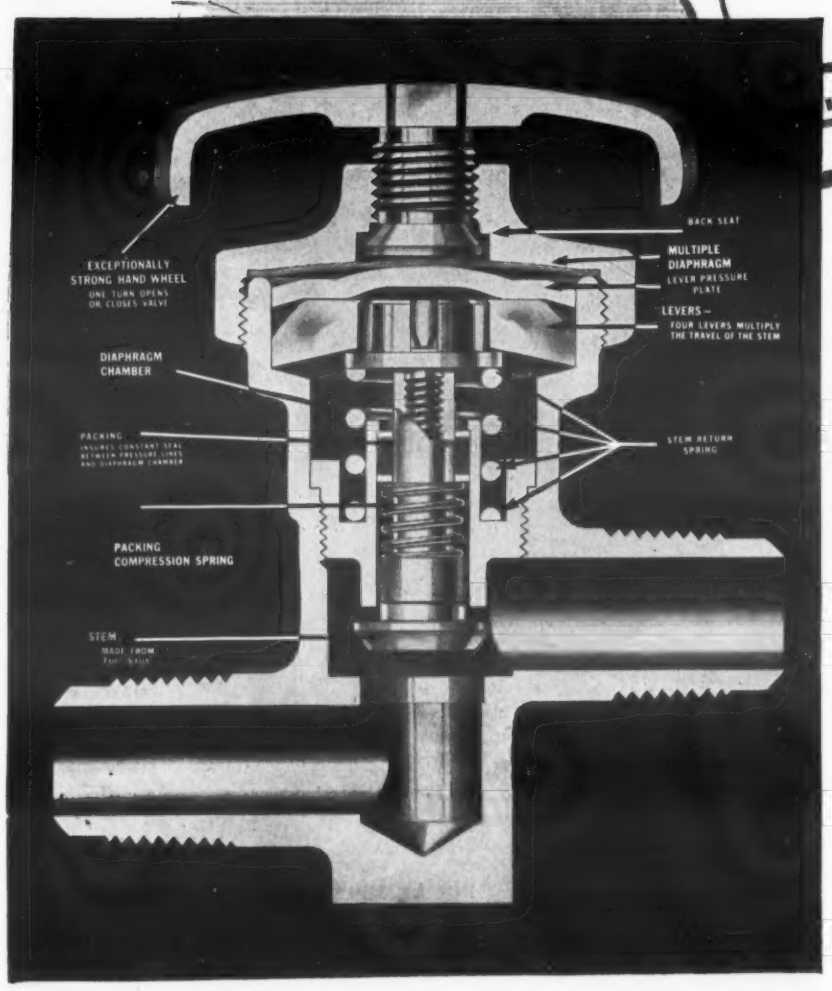

Because of the small amount of movement, the multiple diaphragm in our TRIPL-SEAL Valve is never deflected past its normal center; thus immeasurably prolonging both its life and the life of the valve in service.

The multiple diaphragm has approximately 20% increased surface area over more conventional types of diaphragms. A single turn only is necessary to open or close the TRIPL-SEAL Valve.

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Positive sealing at three essential points in the valve is adequately provided for—a back seat with valve in open position,—the multiple diaphragms,—and a packing around the stem. (This packing insures constant seal between pressure lines and diaphragm chamber.)

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The stem does not rotate, and is constantly guided into the same position against the seat by a cylindrical guide, so processed as to eliminate any possibility of distortion.

The body and cap of the valve are forged brass to eliminate seepage and to withstand frost action; mounting lugs are forged integrally with the body to provide the ultimate in mounting strength.

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Servicing Frigidaire Open-Type Systems

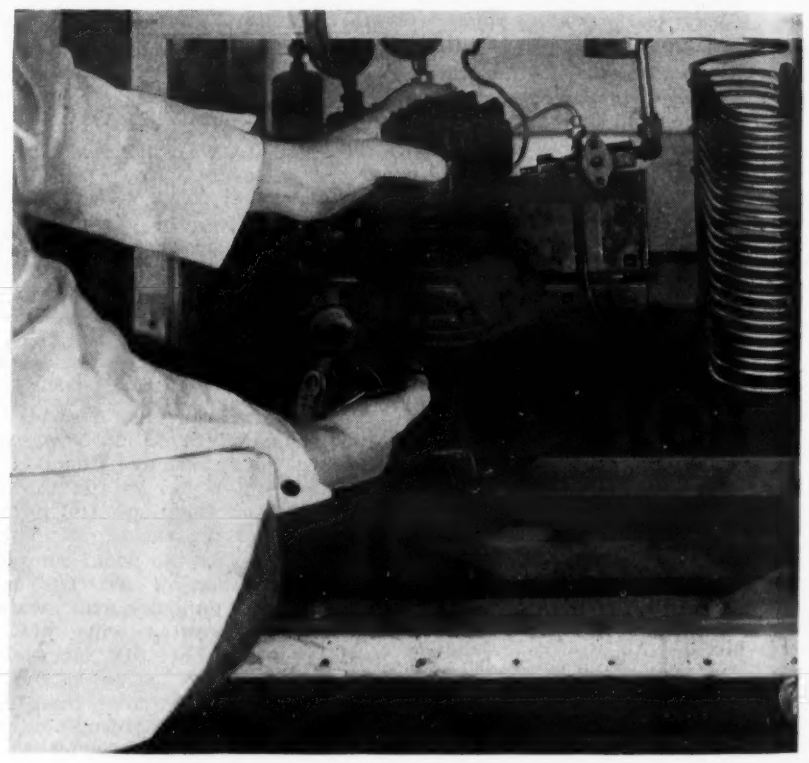
Instalment No. 11

41—Replacing Compressor Bodies

Replacing compressor bodies is an operation undertaken only when compressor bodies cannot be repaired on the job, such as when bad bearings, worn pistons, or broken internal parts are encountered.

A careful diagnosis should always first be made, however, to be sure the body really requires replacing. When it does, install the gauges and reduce the crankcase pressure to ½ lb. Then close both compressor valves and remove them from the body, leaving the lines attached. Next, take off belt and flywheel and remove compressor holddown bolts as shown.

42—Installing New Compressor Body



Then lift compressor body from frame and install shipping valves on old body. Inasmuch as the new compressor body has both discharge and suction valves attached, in order to retain a holding charge of nitrogen gas, service men should install these shipping valves on the old body.

(Continued on Next Page)

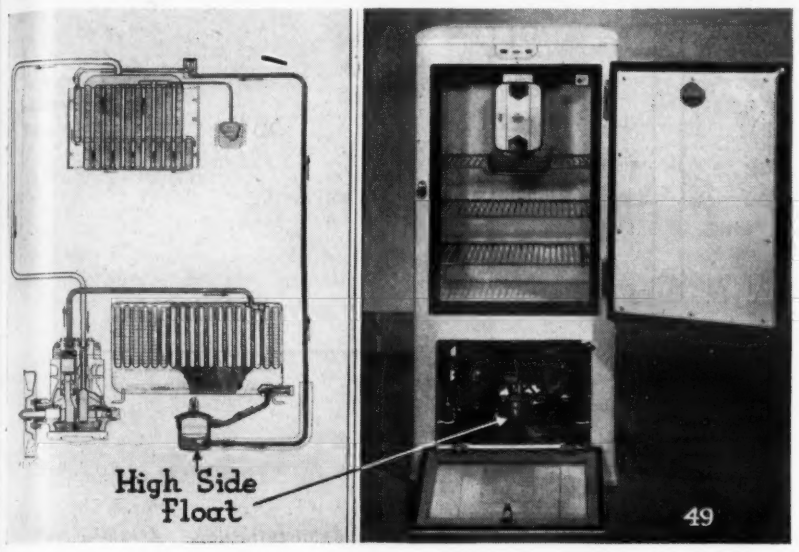
Servicing Frigidaire Systems

The new compressor body can now be installed by reversing the previous procedure. Always be sure to use new gaskets between the valves and the compressor body. After getting the new body bolted securely in place, put the flywheel and belt back on and open the valves. Then test for leaks, and if none are found, service operation has been completed in good order.

43—*Servicing the High Side Float System*

This method of refrigerant control is somewhat different from the earlier low side float system, over which it has certain advantages. Because the two systems are different, some of the service operations also vary. These differences are explained in the following illustrations.

44—*How High Side Float Works*



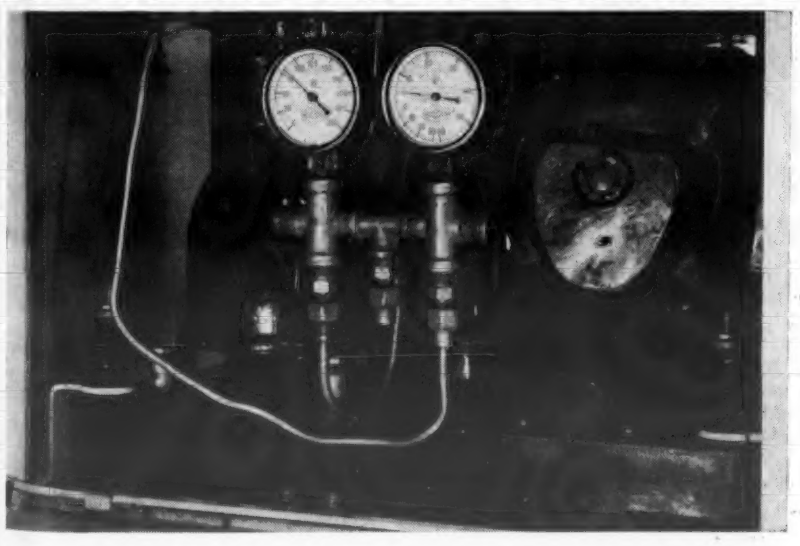
We have pictured here a typical high side float system used in Frigidaire household reciprocating models since 1933. Note that the float valve is located in the machine compartment and is connected directly to the condenser.

The high side float system, as the name suggests, employs the float valve in the high pressure side of the system for the control of refrigerant. As can be seen in the illustration, the float controls the amount of refrigerant passing to the freezer in exact accordance to the amount which is released into the float chamber by the condenser. Thus, any shortage or oversupply of refrigerant in the system is immediately indicated in the freezer.

One of the advantages of the high side float system is that its method of refrigerant control permits most of the service work to be done in the machine compartment.

Service men should be able to visualize the difference between the two systems, and many of the service problems on the low side float system can be readily adapted to the high side float system.

45—*Checking Refrigerant Pressures*



Pressures are checked in the same way and with the same gauges on high side as on low side float systems. However, since the condensing unit valves differ, the installation of the gauges differs also.

Condensing units used with the high side float control system are equipped with both the suction and the discharge valves in the compressor head. The gauges can be installed by removing the protecting plugs, back seating the valves, and installing ¼ inch flare fittings to which the gauge lines are attached.

The illustration shows the location and appearance of these two-way valves, and how the gauges are connected to them. With this gauge hook-up, the procedure in checking pressures is identical to that of the low side float system.

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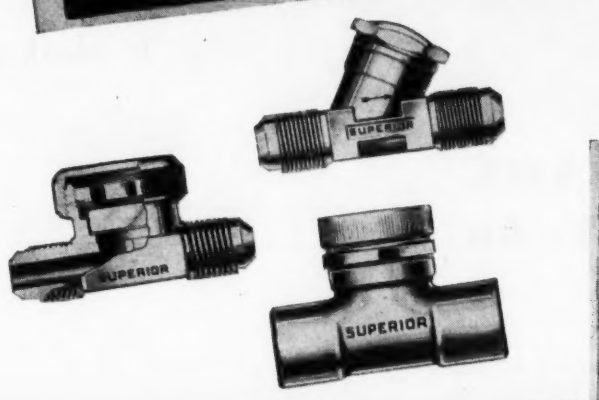

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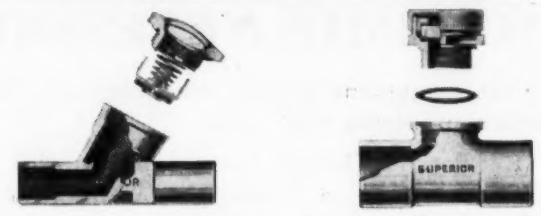

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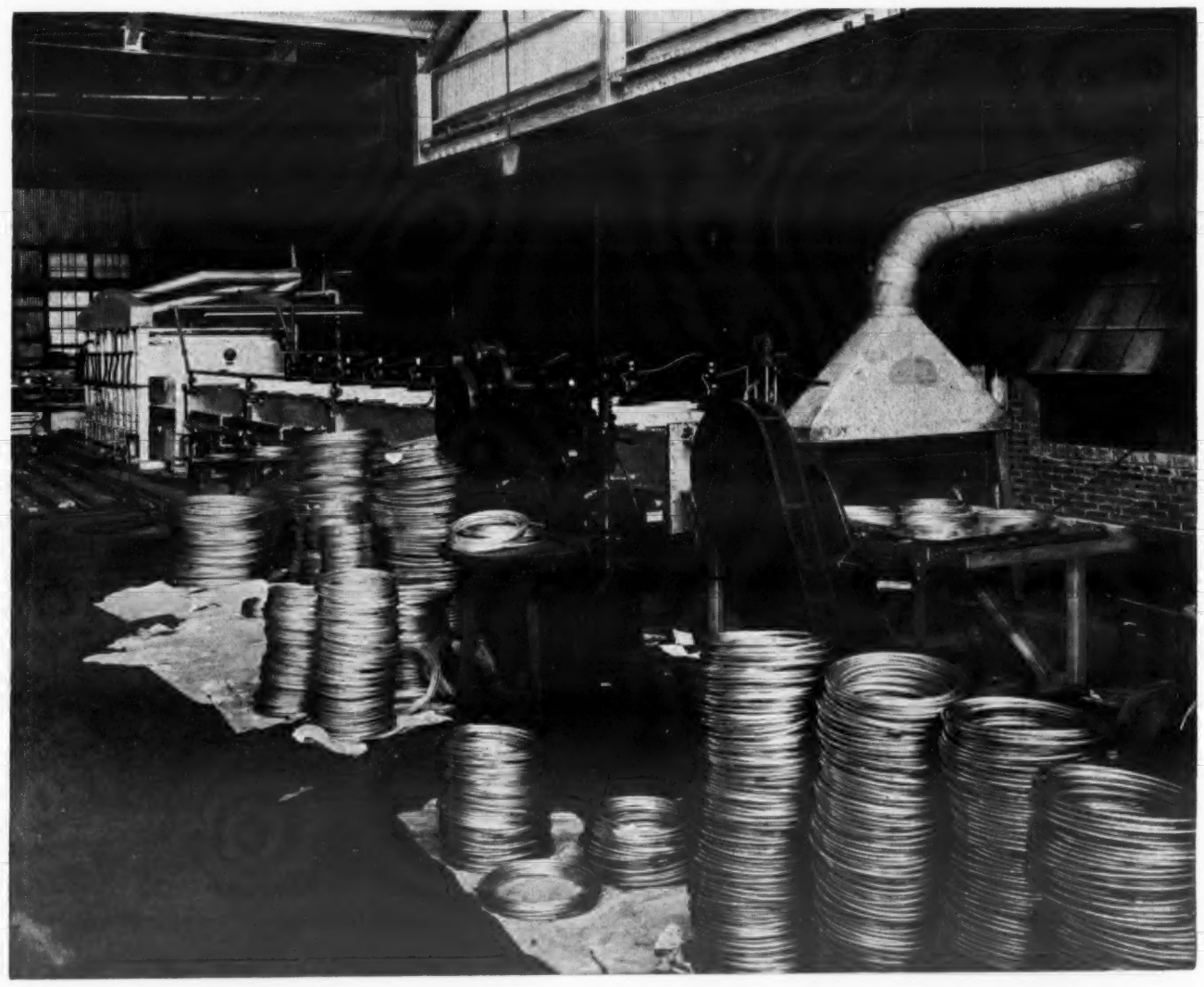

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It comes in sizes from ⅛" to ¾" O.D., with .035" wall. Also available for refrigeration, air conditioning and a variety of other services is Revere Sealed End Copper Tube, which has each end plugged and taped for protection against injury and contamination. Both Revere Dryseal and Revere Sealed End Copper Tube are available from Revere Distributors in all parts of the country. The Revere Technical Advisory Service is always ready to help with your difficult problems.

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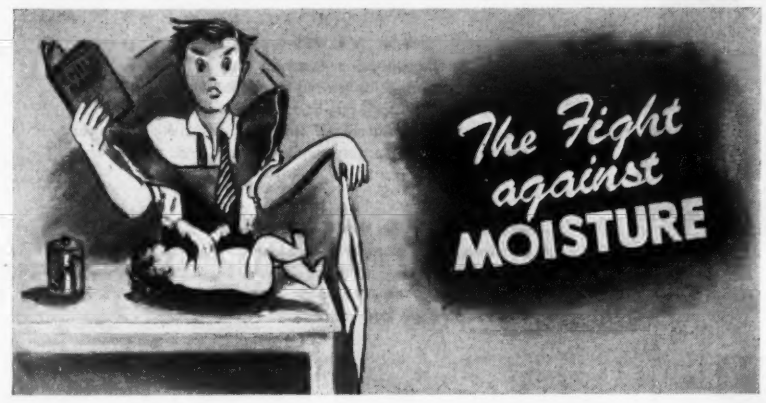

FREQUENT CHANGES ARE SOMETIMES NECESSARY, *but-*

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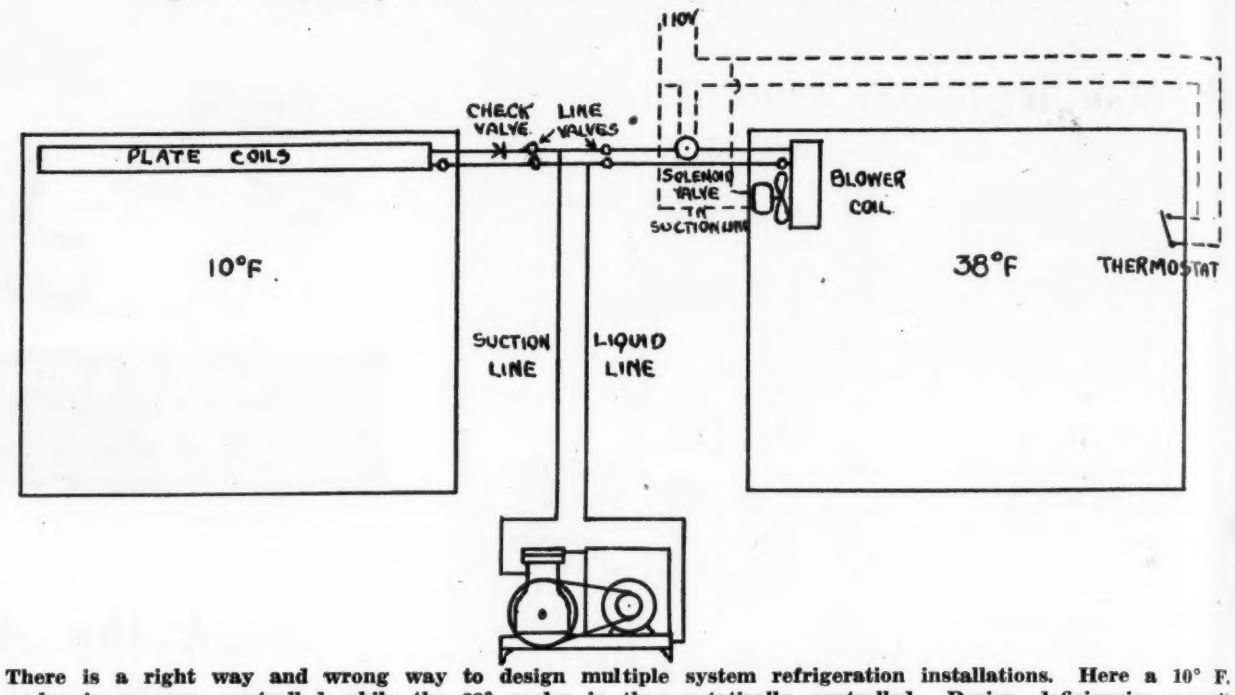
Army Refrigeration Problems

By P. B. Reed
Manager, Refrigeration and Air Conditioning Division, Perfex Corp.

Fig. 1. Hook-up With Pressure and Thermostatic Control



There is a right way and wrong way to design multiple system refrigeration installations. Here a 10° F. cooler is pressure controlled while the 38° cooler is thermostatically controlled. Design deficiencies permit the 10° cooler to become too cold at times. In general, the temperature difference between the two fixtures should not exceed 10°.

* * *

Multiple System Design Problems (2)

So far we have been considering only installations operating at the same temperature. Suppose now that we consider an installation of two 6 by 8-foot walk-in coolers, one held at 38° F. for ordinary fresh meats, vegetables, and fruits, and the other held at 10° F. for the storage of frozen food.

The 38° cooler imposes a 24 hour load of 48,000 B.t.u. and the 10° cooler imposes a 24 hour load of 72,000 B.t.u., making a total of 120,000 B.t.u. per 24 hours. The 38° cooler is equipped with a blower type evaporator and the 10° cooler has plate coils hung from the ceiling.

MACHINE CAPACITY BASED ON LOW TEMPERATURE LOAD

In order for the condensing unit to operate 16 hours per day, the capacity of the condensing unit would have to be 7,500 B.t.u. per hour, (120,000 ÷ 16) assuming that both loads were on at the same time, that is, that both coolers were calling for refrigeration at the same time.

It must be remembered too that the condensing unit must be selected with two points in mind (1) its capacity must be selected on the basis of the low temperature (10°) cooler instead of the higher temperature (38°) cooler.

The evaporator in the 10° cooler will be about -10° F. so the condensing unit will have to be selected for capacity on the basis of a -10° evaporator which corresponds to about 4½ PSI suction pressure ("Freon-12"). However, it will not require a condensing unit having a capacity of 7,500 B.t.u. per hour at -10° F., but only 4,500 B.t.u. per hour at -10° F. for this would enable the condensing unit to carry the 10° cooler by itself when the 38° cooler is off, but when both coolers are on together the suction pressure would be about 25 PSI and a condensing unit that has a capacity of 4,500 B.t.u. per hour at -10° F. (4½ PSI) would have a capacity of more than 7,500 B.t.u. per hour at 25° (25 PSI).

This would give plenty of capacity for the combined load when operating at the 25 PSI suction pressure. A ¾-hp. low-temperature condensing unit would give this much capacity, but a low-temperature type unit is motored for suction temperature up to only about 5° F. evaporator temperature, 12 PSI suction pressure "Freon-12," which brings us to the second point to be considered.

(2) At times the two coolers will be on together and at that time the suction pressure will be around 25 PSI so the unit will have to have a motor that will carry the load at the higher suction pressure. Also, the condenser will be taking an extra load.

So instead of the low-temperature unit that is for use only up to 5° F. suction—12 PSI it will be necessary to use a medium temperature type unit that has a large enough motor and condenser to handle the 25 PSI suction and provide a capacity of at least 7,500 B.t.u. per hour at the 25 PSI. Also, it must have a capacity of at least 4,500 B.t.u. per hour when operating at 4½ PSI suction pressure on the 10° cooler alone.

A 1-hp. medium temperature air-cooled unit will give a capacity of around 10,000 B.t.u. per hour at 25 PSI and at 4½ PSI will have a capacity of about 4,500 B.t.u. per hour.

Figs. 1 and 2 show two layouts and wiring diagrams for this type of installation. In Fig. 1 the 38° cooler is controlled by a thermostat in the cooler. This thermostat actuates a solenoid valve in the branch suction line from the 38° cooler. The condensing unit is pressure controlled with a setting of 3 PSI cut-out, 12 PSI cut-on. The fan motor is wired for continuous operation.

THE SMALL LOAD CAN NOT BE ON BY ITSELF

If the 10° cooler only calls for refrigeration, the pressure rises to 12 PSI and the machine starts and runs until the 10° cooler is cold enough and the suction pressure is down to 3 PSI at which time the

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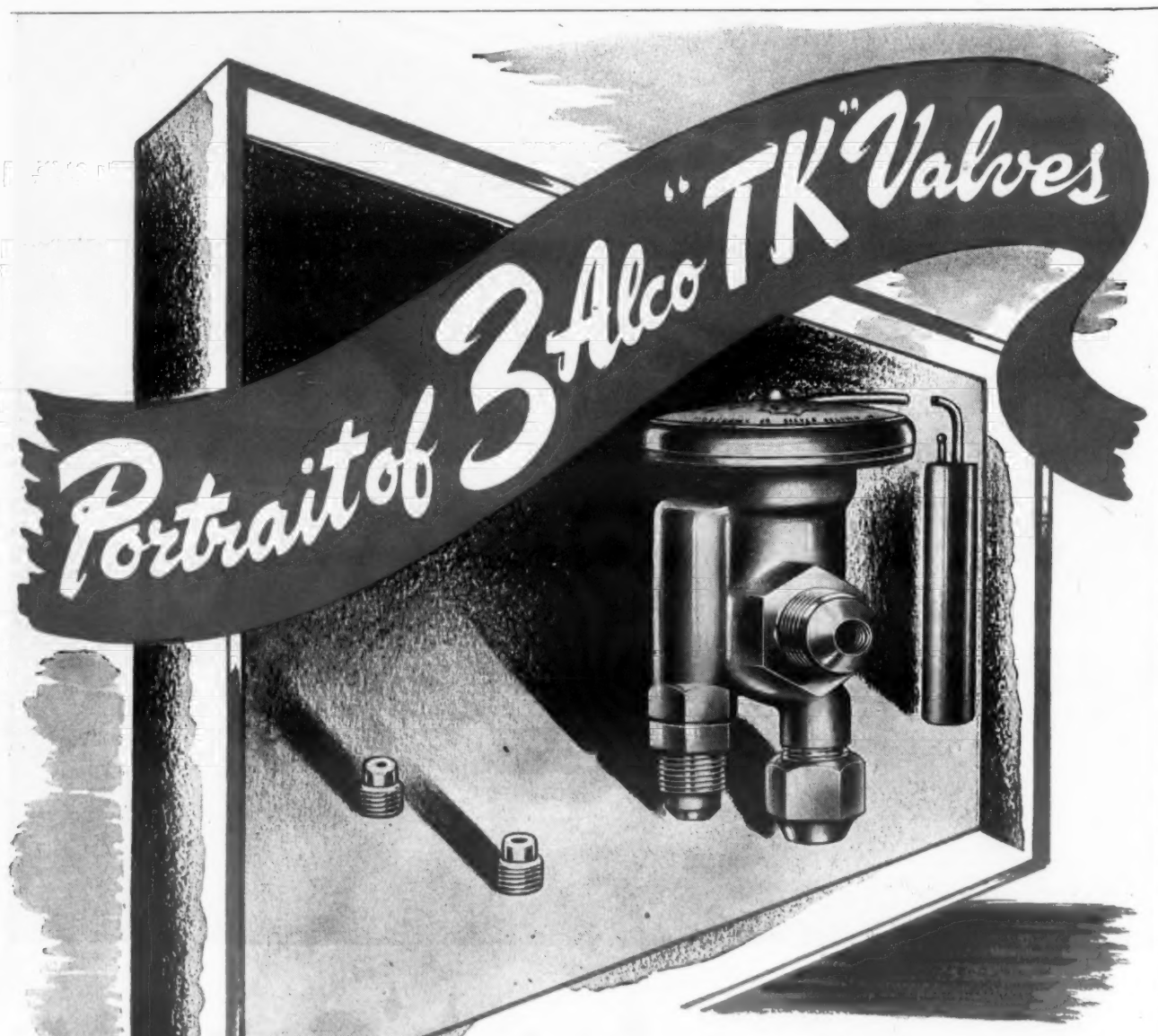

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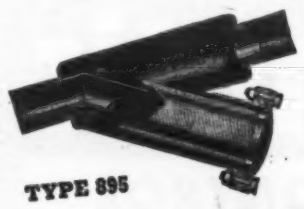

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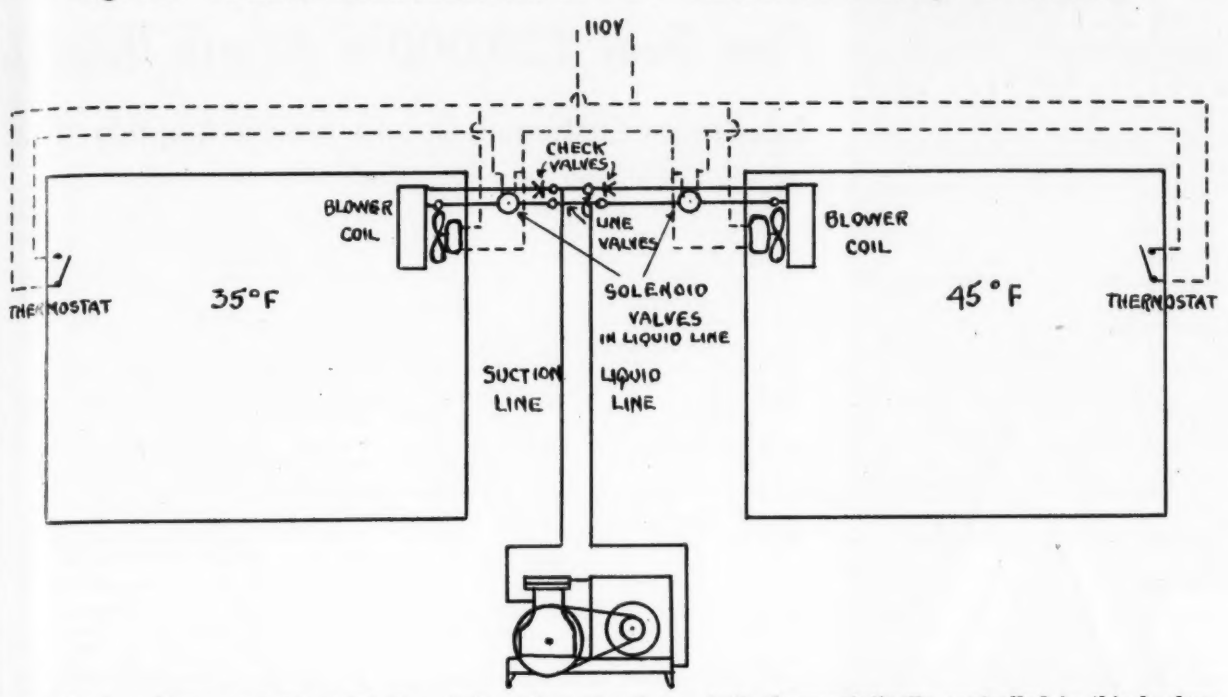
Fig. 2. Where Both Enclosures Are Thermostatically Controlled



Two 6 by 8 coolers, one held at 35° F. and the other at 45°, are both thermostatically controlled in this hookup, providing more efficient operation than the system diagrammed in Fig. 1. Even here, however, the efficiency is not so great as would be obtainable from individual condensing units operating each cooler.

Multiple System Design Problems (2)

(Concluded from preceding page)

pressure control opens and the condensing unit stops.

If the 38° cooler only calls for refrigeration, the thermostat closes, the solenoid valve opens, the warm "Freon" vapor in the blower coil raises the suction pressure in the main suction line, the pressure control closes, and the condensing unit starts and runs until the thermostat is satisfied.

It then closes the solenoid valve and the machine is left running on the 10° cooler only. It will continue to run on the 10° cooler only until this cooler is cold enough that the suction pressure drops to 3 PSI and cuts off the machine.

If the 10° cooler is on by itself and the thermostat in the 38° cooler closes, the suction pressure will rise and both coolers will be refrigerated together until the 38° cooler is satisfied and cuts off leaving the 10° cooler on by itself, to continue to be refrigerated until it, too, is cold enough and the pressure control cuts it off at 3 PSI.

SUCTION LINE CHECK VALVE

The check valve in the branch suction line to the 10° cooler is to prevent the gas in the blower coil in the 38° cooler from condensing over into the cold (-10°) coils of the 10° cooler. This would overcharge the plate coils with liquid "Freon" which at the next run of the condensing unit would slug back to the compressor and probably break valves, rods, or otherwise damage the compressor.

The weakness of this hook-up is that if the load on the 38° cooler becomes unusually heavy it causes excessive refrigeration to the 10° cooler which must be refrigerated when the 38° cooler is calling for refrigeration. As a consequence the 10° cooler may be too cold. At any rate, the control of the 10° cooler is not very effective as it is too much affected by the variation in load on the 38° cooler.

NOT MORE THAN 10° DIFFERENCE

Difference of temperatures between evaporators on the same condensing unit mean changing suction pressures when changing the machine operation from one to the other. This causes inefficient operation, ineffective control of temperatures, and in some cases such high refrigerant velocities as to cause mechanical difficulties.

It is considered a good rule in practice to *not group on the same condensing unit, evaporators that differ more than 10° in temperature.*

TEMPERATURES AFFECTED BY VARIATION IN LOAD

It would not be too serious perhaps in the above case, for abnormally low temperatures of a few degrees would not too adversely affect the frozen foods, but if this installation involved one 6 by 8 cooler for vegetables and fruits held at 45° and another 6 by 8 cooler for fresh meats and dairy products held at 35°, it would be serious if an unusually heavy load on the vegetable cooler caused the meat cooler to run below freezing. Difficulties would also be experienced with frosting up of the blower coils.

Fig. 2 shows the two 6 by 8 coolers referred to in the preceding paragraph, but with a thermostat in each cooler connected to a solenoid in the branch suction lines of its respective cooler. One thermostat is set for 35° F. and the other for 45° F.

The pressure control is set to cut in at 37 PSI (to obtain defrost) and cut out at 2 PSI. Check valves are put in each of the two branch suction lines to prevent "Freon-12" from condensing over into either coil and to allow the pressure in one coil a full chance to operate the pressure control.

SEQUENCE OF OPERATION

If either thermostat calls for refrigeration (closes) it opens its respective solenoid valve, the liquid "Freon-12" passes into the respective evaporator, and if it is warm enough to assure defrosting (about 32°) the suction pressure will rise to the 37 PSI cut-in setting of the pressure control. The machine will start and run until the themostat is satisfied and opens. The solenoid closes and the system pumps down (unless the other cooler is on at the time) to 2 PSI and the condensing unit stops.

This method gives somewhat better independent control of temperature than that in Fig. 1, but has the obvious disadvantage of allowing the condensing unit to operate on the light load alone with the consequent low suction pressure, low evaporator temperature, and the objectionable drying out of the foods. Also, it is very difficult to maintain a defrosted condition of the evaporator coils and requires frequent manual defrosting.

TEMPERATURE DIFFERENCE BY EVAPORATOR PROPORTIONING

As long as there is not a great deal of variation of load on one or more of the evaporators on a multiple system, differences in temperatures can be obtained with good results merely by proportioning the evaporator surfaces so as to provide more refrigeration to the lower than to the higher temperature refrigerator.

Also, instead of attempting to obtain individual control, it is often just as satisfactory and in many instances more satisfactory, to let one evaporator act as the "master" evaporator by maintaining control of its temperature and letting the other evaporators follow along in accordance with the ratio of evaporator area.

This one "master" evaporator must, however, be the one on the installation that has the least variation in load. Any variation in load on the other evaporators will cause variation in the temperatures of their respective refrigerators.

UNITIZED EQUIPMENT REPLACING MULTIPLES

In past years it was common to see installations on which six or eight fixtures, varying from ice cream cabinets at 0° F. to walk-in coolers at 45° F., were installed on the same condensing unit. The original cost of the installation was usually less than if individual condensing units were used for each fixture.

Today the "Christmas tree" jobs are being replaced by "unitized" equipment—fixtures that are each refrigerated by their own individual condensing units, (sometimes self-contained, sometimes with the machine remotely installed). At least different temperature evaporators are separated and put on different condensing units.

MULTIPLES HAVE USES BUT REQUIRE SPECIAL CARE

Individual condensing units are usually more economical in cost of operation, frequently as low in first cost, are much more flexible in use, maintain more accurate control of temperature with variations in load and ambient temperatures and last, but perhaps most important, unitized installations are far more dependable and cause far less trouble, thus costing much less in service and maintenance expense.

There are some installations that are practical as multiples and economical in first cost and maintenance expense, but they usually require more planning and more care to be certain that the factors covered in the preceding paragraphs are taken into full consideration.

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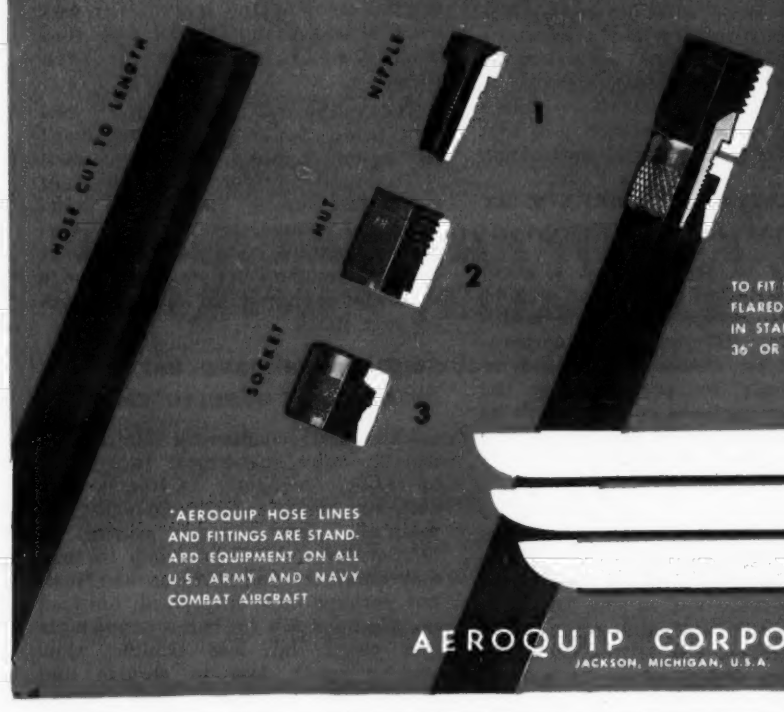

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By Elaine R. Bitter, Freezer Foods, Inc., Chicago

Although we have been operating a store for over a year in which all food items sold are frozen, we do not claim to have the complete answer on how to handle and merchandise all frozen food products. As far as we know, however, it is the first store of its kind, and since December, 1944 it has been making a profit.

Our total sales for each month since December, 1944 have exceeded $20,000. Assuming that only $20,000 worth of business were done each month, in a year's time this is $240,000 or a quarter of a million dollars' worth of business from just *one* store. This, incidentally was subjected to all of the trials and tribulations of an experimental operation.

We feel that the home freezer is here to stay and that the locker plant system is a necessary part in the whole program. When we sell a home freezer, we advise that person to rent a locker. We don't want our customers to store food in their home freezer; we want them to live out of it.

A home freezer that is used as a storage unit is a luxury item. Food can be stored with no initial investment and much more cheaply in a locker. On the other hand a home freezer that is constantly in use and that is being emptied and restocked once a month is an economy item. Then it enables its owner to take advantage of lower prices on food in large packages, cooked foods and baked goods can be kept without spoiling or getting stale, and there will be room to store left overs, thus eliminating waste.

STORAGE LOCKERS HELP

Possibly the best illustration of the value of a locker as well as a freezer is the Victory garden. For a family who decides to freeze instead of can, it is impractical to even consider having sufficient freezing storage space in the home to store all of the peas, beans, corn, asparagus, cauliflower, peaches, raspberries, plums, strawberries, etc. for the whole year. These products can be frozen in the home freezer, but removed to the locker for storage.

With the home freezer, it still isn't necessary to drive five miles down the road or go several blocks up the street every time you want a package of frozen food. The freezer at home can be stocked every month or six weeks with food that is stored in the locker.

In merchandising frozen food there are two ways to distribute it. One is through the retail store and the other is by means of a refrigerated truck. Thus far we have only found it practical to service owners of home freezer with the truck delivery service.

TRUCK DELIVERY

Reason for this is that the truck only visits a customer once a month. We have a list of our route customers and a day or two before the truck is going to stop at her house Mrs. Jones is telephoned and told that the Freezer Food truck is going to be there and would she like to place an order, our specials are thus and so. The truck does not stop for less than a $5 order, but it also carries a bank of food so that if Mrs. Jones thinks of something she wants between the time she is telephoned and the time the truck stops, she can supplement her order when the truck reaches her house.

To operate in this way it is necessary to have a large number of customers with home freezers, although in some cases the truck makes its delivery to the frozen food locker. This practice simplifies the marketing problem and when people realize that there is always a supply of frozen food available, it lessens the tendency to hoard. Our average truck sale per stop is from $15 to $20.

The retail store operates very much like any other food store. Anyone can stop in and make as large or as small a purchase as they choose. Most of these are smaller purchases to people who do not own a freezer.

A large percentage of our total sales is *meat*. All of the meat that we sell is frozen. We receive rounds, ribs, loins, and chucks from the packers. It is not frozen when we get it. As soon as it is delivered to us we begin to age it. This is done in five days by a patented process that employs agents no other than temperature and humidity control. This process eliminates trim loss and cuts shrink to less than 1%.

AGED MEAT BETTER

It is an accepted fact that aged meat is better than unaged meat. I am speaking of beef, particularly. It has never been possible to sell aged beef commercially because there was so much loss resulting from shrinkage and surface trim that the price per pound would have to be increased to the point where it was prohibitive. We age the meat in five to seven days as thoroughly as it was formerly aged in four to six weeks. This is done without the aid of lamps or lights of any kind. It is a natural ageing process.

After ageing, it is cut and wrapped in saleable packages—four chops to a package, one steak, one roast, etc. We feel that it is necessary to guard against dehydration, therefore we wrap first in cellophane and then give each package a protective wrap of locker paper.

As soon as it is wrapped it is frozen. There is room for much improvement in the wrapping and packaging of meats. Eventually they might all be boxed, but at the present time this is still a problem to be worked out.

There are several advantages to this method of handling meat. First, the butcher does nothing but cut meat; he does not have to stop and wait on customers. He can cut a lot more meat in eight hours if he is free from interruptions.

Second, he operates as a skilled workman. Since he is being paid the wages of a skilled workman i

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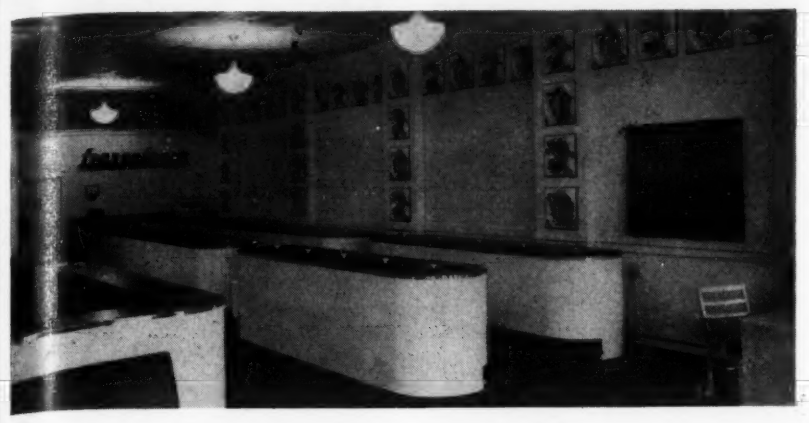
Store Interior At Freezer Foods, Inc.



These Trucks Deliver To Freezer Owners

Frozen Meats, Vegetables, Fruits, Juices And Precooked Specialties are Featured

(Concluded from preceding page)

is good business to spend his time in this capacity.

Third, it is efficient. Once he begins handling a piece of meat he does not stop until he is finished with it. Ordinarily a round or a loin might be hauled in and out of a refrigerator a dozen times before the last cut is sold.

Fourth, freezing and storing retail cuts of meat levels off the peaks and valleys of meat distribution. We can place our orders a month in advance, and accept delivery at the packers' convenience. There is no week-end rush. Our butchers are no busier on Saturday than they are on Monday.

COOKING FROZEN MEAT

Now I want to say just a word about the cooking of meat. We handle nothing but choice and prime meats; quality is one of the most important features in this whole operation. When a person buys a piece of meat already wrapped, he or she is trusting us as to the *quality* of that meat. It has to be good or she will never return and buy another roast or steak with any confidence. It is just as important to *keep* ones confidence as it is to gain it originally, so our product must be consistently good.

Although we handle only the best meats occasionally we get a complaint on them. When these are traced down, almost every one comes from someone who thaws her meats before she cooks them. This results in loss of juices from the meat, particularly steaks and chops.

When frozen meat is allowed to reach room temperature before being cooked there will be a small amount of juice in the paper or on the platter. In this is contained the flavor of the meat and it is useless to try to put it back once it has been lost. You can baste or use whatever means you like and it is just like trying to put the juice back in an orange once it has been squeezed. You can pour it over the orange as many times as you like and it will never be quite the same.

JUICE MUST BE HELD

If you cook the frozen meat slowly, that is cook as you thaw, the proteins in the juice will be coagulated by the heat before they have a chance to drip out. If nothing is lost from the frozen meat, it stands to reason that it will be as juicy and full of flavor as fresh meat.

With a roast it is sometimes advisable to allow it to stand over night in the refrigerator. In this length of time the temperature will be brought up sufficiently to cut the cooking time, but the meat will not thaw enough to begin to drip.

We also carry a complete line of frozen vegetables. For people who have home freezers we have the 2½ and 5 pound packages. It is obvious that it is wiser to buy 2½ pounds of peas for 64 cents than to buy 12 ounces for 23 cents. All of our vegetables are the loose pack so that it is not necessary to use the whole package once it is opened.

Each pea and bean is individually frozen, hence when the package is opened as much or as little can be poured out as it is desired to use at any particular time. We also carry small packages for those who do not have a freezer.

Frozen fruits, of course, are always much in demand. Texas pineapple, huge cultivated blueberries, beautiful big segments of pink grapefruit, and the favorite of all frozen fruits, the strawberry are items you can always count on to bring people into your store, and you know they will enjoy eating and serving them.

Fruit juices are another item that are delicious when frozen. Thus far I haven't said a thing about the nutritive value of frozen foods. The fruit juices are the best example of this. All of the vitamins are retained in the freezing process. This is not true in canned fruit juices.

The principal reason for drinking citrus fruit juices is for the vitamin C content. This vitamin is destroyed by heat in all fruit juices except tomato juice. The frozen orange, lemon, and grapefruit contains all of the vitamin C that is in the fresh tree ripened fruit. Since the freezing is done wherever the fruit is grown, it is truly tree ripened fruit.

The frozen fruits and vegetables are really fresher than the so-called fresh vegetables that appear on our metropolitan markets. A product that is picked green and is five to eight days in transit as is often the case before reaching a Chicago or New York market has lost much of its vitamin content before it ever reaches the hands of the ultimate consumer. To say that frozen foods are fresher than fresh is no exaggeration.

PRECOOKED SPECIALTIES

The precooked frozen foods are the products that have been of particular interest to me. Specialty food items from all parts of the country can be made available to everyone and appear on the table of persons everywhere regardless of their income bracket. These foods are ready prepared. Nothing needs to be added; they are convenient to use. This in addition to their high quality is responsible for their success.

Such items as chicken a la king, browned beef stew, spaghetti and meat balls, Welsh rarebit, shrimp gumbo, cream of tomato soup, chile con carne, and chop suey, are foods that everyone likes but that few people know how to prepare or are willing to take the time to prepare. It is necessary to combine a lot of ingredients that most kitchens do not have on hand at a moments' notice. These dishes can be prepared by master chefs and made available in the frozen state. This preserves a blend of flavors that it is not possible to can.

Right now these foods are more expensive than they would be if prepared at home. In time, however, when they are prepared in a larger volume and filling machines are designed that will cut down hand labor without impairing the quality of the product, the price will not be prohibitive.

We are now freezing salads and bakery products. Our pies, muffins, and yeast rolls are a perfect triumph for anyone who serves them. The bakery products are frozen unbaked. They can be baked immediately or stored in your freezer for an indefinite period of time—until it is convenient to use them. They do no get stale.

The yeast rolls must be allowed to rise because the yeast is inactivated but not killed in the freezing process. The pies and muffins are simply placed in a hot oven and allowed to bake. As soon as they are nicely browned they are done. Eventually we will be selling complete meals boxed and frozen. It will only be necessary to just heat and serve.

In spite of the strides we have made in this past year we realize that freezing food has such tremendous possibilities that we have just scratched the surface. No one can predict what another year's work will bring us.

Ben-Hur "Farm and Home" Freezers Are Quality Built

TO INSURE YOUR PROFIT AND PRESTIGE!

. . . A Line Engineered to Give You These Outstanding Advantages to Feature:

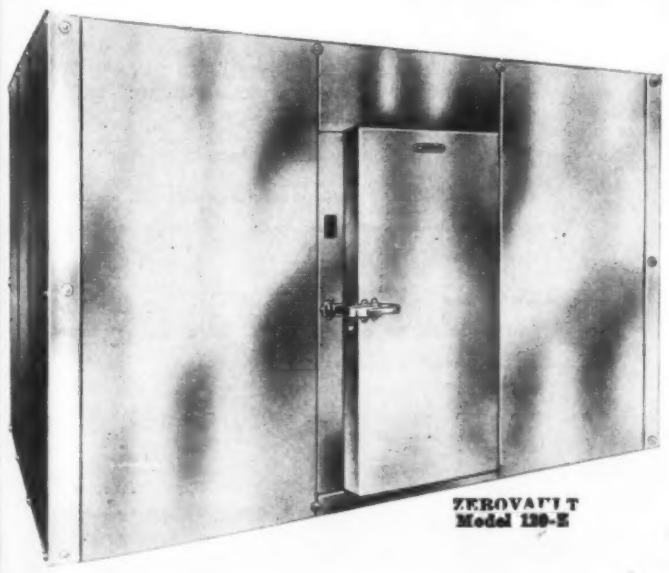
1 SOUND AND DURABLE Construction — with lasting insulation, properly built in.
2 FULLY LABORATORY TESTED — Under Every Conceivable Operating Condition.
3 PRACTICAL AND EFFICIENT IN DESIGN — for Conveniently Accessible Food Storage.
4 ENGINEERED AND PERFECTED by Foremost Refrigeration Experts. Built for Long-lasting, Trouble-Free Operation.
5 A COMPLETE LINE OF SIZES—to Meet the Needs of Every Family — City or Rural.

BEN-HUR MFG. CO.
324 E. Keefe Avenue Milwaukee 12, Wisconsin
Continuous Manufacturing For Over 33 Years.

With quality features built-in and long years of sound manufacturing experience to back them up, you can be sure, that your profits and your prestige will grow with every "BEN-HUR" Farm and Home Freezer you sell. Your customers will be satisfied.

Write today for "BEN-HUR" Distributorships or Dealerships now being appointed.

BEN-HUR FARM & HOME FREEZERS

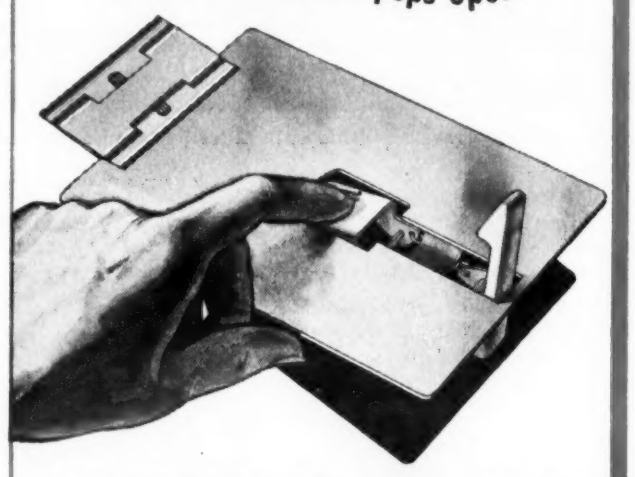


WILSON ZEROVAULT
STORAGE FOR FROZEN FOODS

- ZEROVAULT has a significant place in our post-war stepped-up production schedule of low-temperature equipment.
- Sectional in construction, ZEROVAULT is easily erected in otherwise inaccessible places . . . is easily enlarged to care for expansion of frozen food distribution facilities.

WILSON CABINET CO. SMYRNA DELAWARE

Press and the door pops open!



Save Time—Save on Cost
with this quick-opening FLUSH door latch

Hartwell's new *flush* door latch speeds the opening and closing of inspection and access doors. On many installations it can be substituted for more expensive hardware.

The Hartwell latch can be used on metal, plastic or wood, and on doors of varying sizes and thicknesses. It can be used on inspection and access doors, cover plates, cabinet and locker doors, and flush fixtures. By eliminating projecting knobs, it improves streamlining.

PRESS to open!
Pressure on the trigger releases the bolt, and the door pops open.

PRESS to lock shut!
Pressure on the bolt, when the door is closed, locks it shut.

Pat. Appl. For

MADE OF STAINLESS STEEL, the Hartwell latch is sturdy and corrosion resistant. Twin springs, controlling bolt and trigger action, insure positive locking. The latch is splashproof, and can be used with or without the new Hartwell flush hinge. It can be supplied unmounted or spotwelded to an installation plate.

For detailed information about uses and adaptations of the new Hartwell flush door latch, write: Engineering Dept., Hartwell Engineering Company

HARTWELL
ENGINEERING COMPANY
DESIGNERS • MANUFACTURERS • DISTRIBUTORS
3417 Crenshaw Boulevard, Los Angeles 16, California

This GRUNOW SEAL
in your Telephone Directory
will make you MONEY

● This Grunow Authorized Service Seal is one sure road to high profits in the refrigeration service business. This sign, plus genuine parts will produce business which will surprise even the most skeptical service man.

You'll gain customer confidence; eliminate "call-backs"; cut service time.

Get this ad in your local telephone directory now! Write for our Grunow Authorized Service franchise.

Grunow
AUTHORIZED SERVICE, INC.
4313 W. Fullerton Avenue, Chicago, Illinois

FACTORY TESTED PARTS

★

BACK THE 7th WAR LOAN . . . BUY MORE WAR BONDS

★

Here's the Inside Story
WHY Wagner REPULSION-START INDUCTION MOTORS ARE PREFERRED WHEN TROUBLEPROOF MOTORS ARE NEEDED

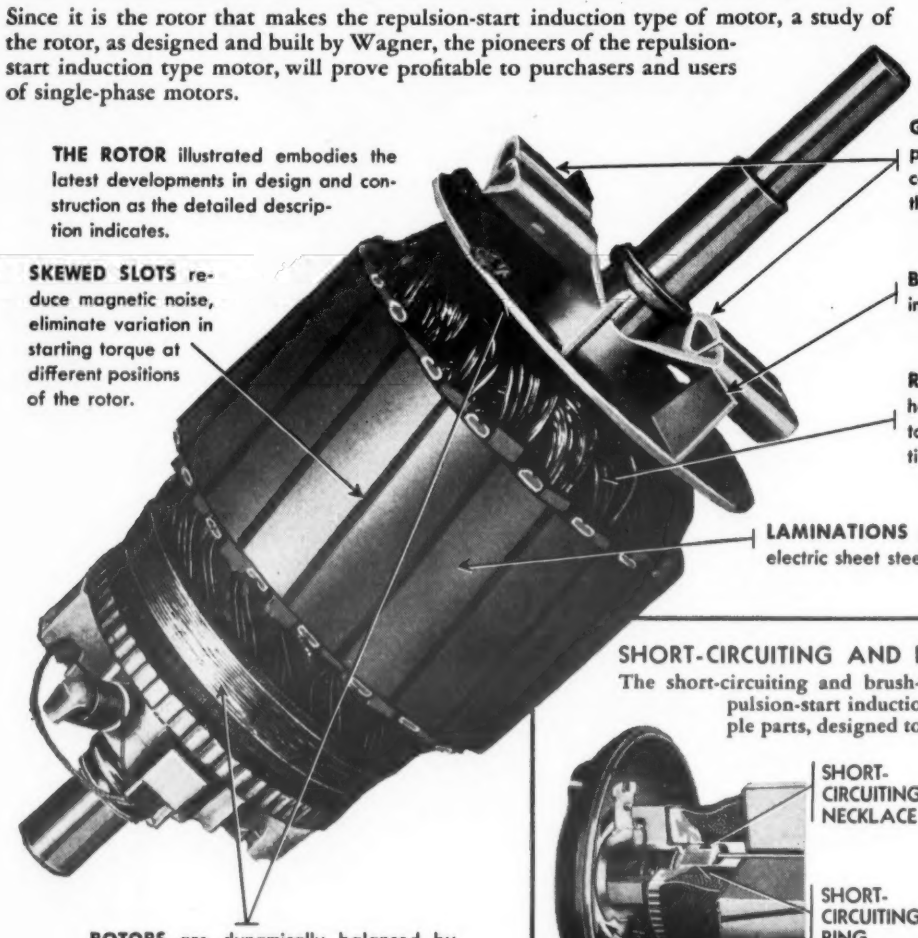
The inside story of the Wagner repulsion-start induction motor tells *why* this motor is troubleproof.

The heart of the repulsion-start induction motor is the rotor, which is so constructed that the motor starts as a repulsion motor and at a predetermined speed is automatically converted into an induction motor. This changeover is effected by a short-circuiting and brush-lifting mechanism shown in detail in the two small cross-section photographs below.

Since it is the rotor that makes the repulsion-start induction type of motor, a study of the rotor, as designed and built by Wagner, the pioneers of the repulsion-start induction type motor, will prove profitable to purchasers and users of single-phase motors.

THE ROTOR illustrated embodies the latest developments in design and construction as the detailed description indicates.

SKEWED SLOTS reduce magnetic noise, eliminate variation in starting torque at different positions of the rotor.



GOVERNOR WEIGHTS, formed of rust-proofed steel, when thrown outward by centrifugal force move pushrods which pass through rotor and actuate brush mechanism.

BLOWER is constructed of sheet steel punchings securely riveted together.

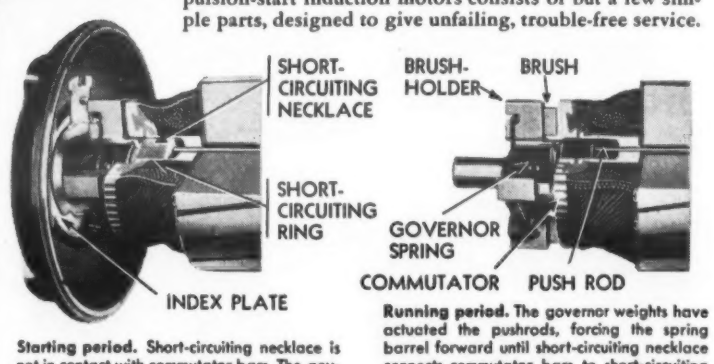
ROTOR WINDING is machine-wound, of heavy formvar-insulated wire and designed to fit the slots without crowding. It is effectively insulated from the rotor iron.

LAMINATIONS are punched from nonaging, high-grade electric sheet steel selected for its magnetic properties.

ROTORS are dynamically balanced by adding solder to the band and riveted weights to the blower.

SHORT-CIRCUITING AND BRUSH-LIFTING MECHANISM

The short-circuiting and brush-lifting mechanism of Wagner repulsion-start induction motors consists of but a few simple parts, designed to give unfailing, trouble-free service.



Starting period. Short-circuiting necklace is not in contact with commutator bars. The governor spring holds spring barrel in starting position. Brush assembly completes selected circuits so motor starts as a repulsion motor.

Running period. The governor weights have actuated the pushrods, forcing the spring barrel forward until short-circuiting necklace connects commutator bars to short-circuiting ring. With all circuits short-circuited, windings form a "squirrel cage" to permit motor to operate as an induction motor.

MOTORS are but one of several WAGNER PRODUCTS serving industry.

Other WAGNER PRODUCTS:
AIR BRAKES
BRAKE LINING
HYDRAULIC BRAKES
INDUSTRIAL BRAKES
INDUSTRIAL BRAKE CONTROLS
TACHOGRAPH (Recording Speedometer)
TRANSFORMERS

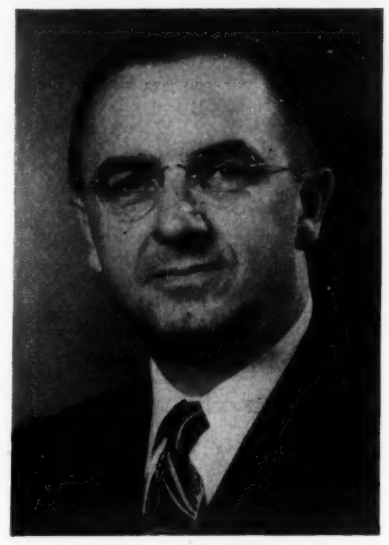
M45-11

Wagner Electric Corporation
ESTABLISHED 1891
6441 Plymouth Avenue, St. Louis 14, Mo., U. S. A.
ELECTRICAL AND AUTOMOTIVE PRODUCTS

Remember these advantages of repulsion-start induction motors: They (1) can start high-inertia loads and accelerate them smoothly, (2) require lower starting current than other types of single-phase motors, and light flicker is therefore negligible when they start, (3) maintain high operating speed even under considerable overloads, and (4) have a flat efficiency curve over a wide operating range.

FOR COMPLETE INFORMATION on Wagner Repulsion-Start Induction Motors, ask for Bulletin MU-185 which describes all types of Wagner single-phase, polyphase, and direct-current motors.

New Merchandising Chief



ALLYN R. HECK
Was recently appointed merchandise manager of the household refrigerator department in Westinghouse's appliance division.

Staehle Joins Schaefer After Army Release

MINNEAPOLIS — Fred Staehle, back from three years in the Army Air Forces, is the new factory representative in five Southwestern states for Schaefer "Pak-A-Way" home and farm freezers.

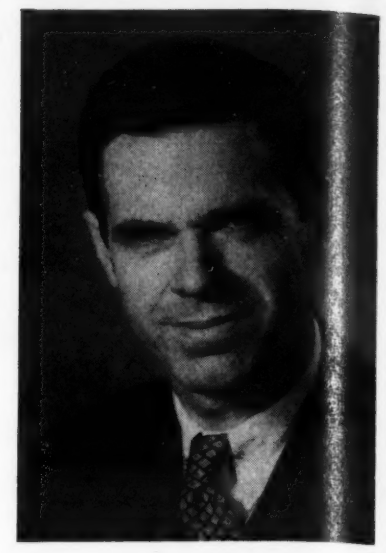
His territory will cover Arkansas, Louisiana, New Mexico, Oklahoma, and Texas, with headquarters in Houston, Tex. Prior to his service in the armed forces, Mr. Staehle spent 15 years in the electrical appliance merchandising field.

Schaefer, Inc., manufacturer of "Pak-A-Way" freezers, have been making frosted food cabinets since 1929.

Fire Destroys Plant of Modern Refrigerator Co.

GLENDALE, Calif.—The plant of the Modern Refrigerator Co., at 823 Milford St., Glendale, Calif., was destroyed by fire on May 13 with a loss estimated at $150,000. The company is owned by A. F. and F. R. Peterson.

Bourns to Head Central Sales of Westinghouse



H. C. BOURNS

* * *

MANSFIELD, Ohio—H. C. Bourns has been appointed central district supervisor of the Refrigeration Specialties Department of the Westinghouse Electric Appliance Division.

Mr. Bourns came to Westinghouse with a background of broad experience in refrigeration, having been previously with the Bernard Gloekler Co., Mills Novelty Co., and Harold L Schaefer, Inc.

In his new capacity, Mr. Bourns will be responsible for the sale of the products of the Refrigeration Specialties Department in the central district, comprising Ohio, Michigan, Western Pennsylvania, and some counties in West Virginia and Kentucky.

E. J. Chevalier Organizes Newark Distributorship

NEWARK, N. J. — Edward J. Chevalier, former sales manager for Kirch-Radisco, Inc., recently announced the opening of an office at 790 Broad St., here. Mr. Chevalier will act as a distributor and manufacturers' representative for air conditioning, refrigeration, and ventilating equipment.

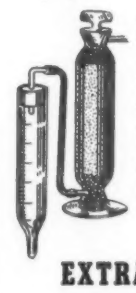
Service Engineers Should Know . . .

THE PURITY OF "VIRGINIA" SULFUR DIOXIDE IS CAREFULLY GUARDED

— the content of each cylinder — large or small — is analyzed 2 separate times.

1. CLEANLINESS TEST

A measured sample drawn from each container must be water-white in color and when boiled to dryness must leave no dirt, oil or other residue. This test detects undesirable impurities.



2. MOISTURE TEST

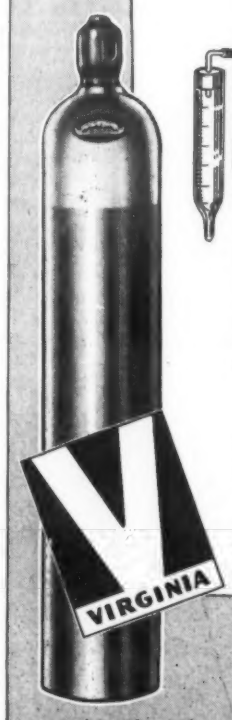
A sample of known weight from each cylinder is passed through P_2O_5 (a dessicant). Moisture calculated by the increased weight of the tube must not exceed 50 parts per million; low moisture prevents freeze-ups and oil-sludging.

EXTRA PRECAUTIONS

To prevent any possible contamination of "Extra Dry Esotoo" every cylinder is **dry cleaned** and finally rinsed with pure SO_2 before filling.

Each cylinder valve is inspected and reserviced to assure trouble-free operation — this saves time and money for the service engineer.

The name "EXTRA DRY ESOTOO" on the cylinder is your guarantee of quality. Sold by refrigeration supply jobbers everywhere.



VIRGINIA Smelting Co.
WEST NORFOLK, VA.
76 BEAVER ST., NEW YORK 5 :: 131 STATE ST., BOSTON 4
Agents for Kinetic's "Freon-12" — "Freon-22" — "Freon-11"

Public Relations--

(Concluded from Page 1, Column 2)

tioning equipment in all present fields and in any new fields that may present themselves. It is intended that by the time the industry will be seeking outlets for its production, these expanded markets will be available.

2. To increase the market for replacement parts in existing refrigeration and air conditioning installations by educating users to the importance of maintaining their equipment in prime condition.

3. To create prestige for the industry so that the public will have a high degree of respect for its service.

4. To afford a public relations service along similar lines to related groups in the industry in order to provide greater accumulative effect, greater emphasis on each phase of the program and an enhanced unity within the industry.

5. To spread the story of refrigeration's part in the war, not only to show how important it can be for peacetime uses but to assist in educating all phases of the public to the importance and potential universality of temperature controls.

"There are two basic types of 'public' which must be influenced to bring fullest benefits to the industry," Sills pointed out. "One is the trade public—those men in hundreds of businesses, professions, and industries who are the purchasers of refrigeration and air conditioning equipment.

"The other is the general public—which includes everyone—which by its desires and interests leads the commercial men to determine their own purchases. The housewife who is sold on the benefits of frozen foods will soon make her grocer, butcher, and fish dealer provide frozen foods; the executive who demands air conditioned offices will lead building managers to install this equipment. There is no one whose influence on the side of this industry's products will not be directly valuable to the industry."

In inaugurating this campaign, it was stated by Arthur Shellenberg of St. Louis, retiring REMA president, this association is making a beginning which it believes is needed by the entire industry.

"It is our belief," he said, "that the success of this year's program will show the potential advantages to all branches of the industry and lead to a unified and expanded program for the future years. A concerted effort on behalf of all can bring to realization the tremendous potentialities of this industry."

George Allen of Pittsburgh is chairman of REMA's public relations committee, which will coordinate the program.

Parts Makers--

(Concluded from Page 1, Column 4)

The following is from a bulletin sent out from a manufacturer of parts, and in general reflects the fact that there is very little now that can be definitely said on the matter of filling orders:

"WPB has in effect announced that effective July 1, copper, copper alloy, and aluminum mill products may be purchased, produced, distributed, and resold without specific WPB authorization.

"This means your 'unrated' purchase orders for such materials may be accepted—now—for scheduled deliveries July 1 or later, without a specific metal allotment, without symbols, ratings, or certifications. The production and delivery of such orders will be subject to the prior delivery of controlled materials or rated orders for materials of essential importance to the Armed Services, and to the availability of metals and of production capacities.

"Your use of metals obtained on "unrated" orders, for installation, or for further fabrication into the products of your manufacture, may still be subject to the control of one or more of the WPB limitation or 'L' orders."

Crosley Field Service--

(Concluded from Page 1, Column 4)

partment by Crosley factory service department employes and then turned over to the distributor for operation by his own service men.

"The results were beyond our expectations," Mr. Newell said. "After one month's operation, the distributor's enthusiasm exceeded ours. The plan was completely successful."

To extend the plan throughout the country, Crosley regional service managers were given a complete course of instruction at the Cincinnati Crosley plant, so that each installation would be uniform. In turn, the regional service managers conducted training classes for distributors' service men in the various distributors' service department.

It has been found possible to service approximately 85% of the Crosley sealed-in units in the field, Mr. Newell said.

DEPENDABLE ★ Dependable ★ DEPENDABLE ★ Dependable ★ DEPENDABLE

Fast Delivery on
REFRIGERATION
PARTS & SUPPLIES
WRITE FOR CATALOG

THE HARRY ALTER CO.
1728 S. Michigan Ave. Chicago, 16, Ill. — Two Big Warehouses to Serve You — 134 Lafayette St. New York, 13, N.Y.

Ask Your Jobber for
HASCOBILT Parts
SUCTION and DISCHARGE VALVE, DISC, REEDS and SPRINGS
for Conventional and Hermetic Type Compressors
HASCO, INC.
GREENSBORO, N. C.
If your jobber can't supply you, send for illustrated catalog and price list.

For: TRUCKS, LOCKERS, COOLERS, COUNTERS AND CABINET CONVERSIONS, use
KOLD-HOLD PLATES
KOLD-HOLD MFG. CO.
LANSING, MICH., U.S.A.

WOLVERINE TUBE DIVISION
Calumet & Hecla Consolidated Copper Company
1411 CENTRAL AVE., DETROIT 9, MICHIGAN

The DFN System

Stays ON THE LINE Longer

Needs Less Servicing Because It Holds More Moisture, Sediment and Sludge

DFN Cartridges have greater moisture-adsorption capacity, because they are mechanically-packed with the correct quantity and density of dust-free, thoroughly-reactivated drying agent. There is no danger of loose non-uniform packing or loss of dehydration strength in servicing . . . common failings in standard refillable types. Hermetically-sealed DFN Cartridges are ready for use when wanted.

They hold more sediment and sludge without pressure drop, too, because an exclusive DFN strainer and filter assembly covers the complete area of the outlet and inlet with multiple layers of wire mesh, bronze wool and felt.

Each DFN Cartridge provides triple-protection against freeze-ups, clogging and corrosion. The DFN Shell is used over and over again. You merely change inexpensive cartridges as needed—multiplying your savings in time, labor and parts with each successive change. Ask your distributor or write for Catalog R-7.

McINTIRE CONNECTOR CO. NEWARK 5, N. J.

Only the DFN SYSTEM DEHYDRATES FILTERS NEUTRALIZES
DEHYDRATORS • STRAINERS FILTERS • NEUTRALIZERS

TEMPRITE
Equalizer Tanks

Reduce wear on:
1. Condensing unit motors
2. Condensing unit belts
3. Condensing unit control points
and
4. Reduce consumption of electric current

Now, more than ever before, TEMPRITE Equalizer Tanks are important in prolonging the life of condensing units. Users have found that an Equalizer Tank will overcome the short cycling condition caused when the load applied to a cooler or lowside is intermittent and of short duration. The elimination of condensing unit short cycling reduces excessive wear on the motor, belt, and control points and lowers the consumption of electric current.

To overcome this short cycling the TEMPRITE Equalizer Tank acts as a suction gas storage tank between the lowside and the compressor.

These TEMPRITE tanks can be installed on all types of refrigeration equipment. They are made of cold rolled steel, are electrically welded, pickled and neutralized, insuring them of being free from scale and rust; they are then dehydrated and thoroughly tested for leaks.

TEMPRITE Equalizer Tanks carry Underwriters Laboratories, Inc., approval. Protected by U. S. Letters Patent.

5 sizes available
¼ H.P. up to 15 H.P. Condensing Units

LOOK 10 Day Delivery!

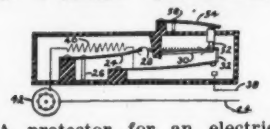
Dealers: Here is good news for you—TEMPRITE Equalizer Tanks can be ★ delivered within 10 days after we receive your order with the proper priority ★ extended to us. For complete information write our sales department today.

TEMPRITE PRODUCTS CORP.
Originators of Instantaneous Liquid Cooling Devices
43 PIQUETTE AVENUE • • • DETROIT, MICHIGAN

PATENTS

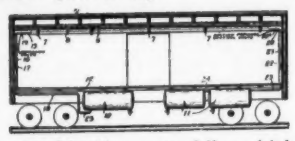
Weeks of May 1 & 8

2,374,967. REFRIGERATING APPARATUS. Donald P. Alexander, Oakwood, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Aug. 27, 1942, Serial No. 456,427. 9 Claims. (Cl. 200—122.)



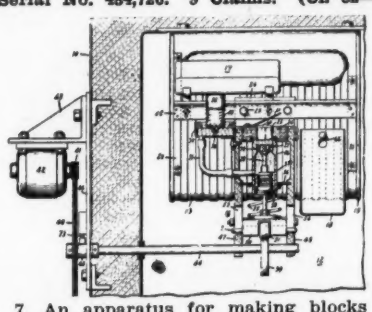
1. A protector for an electric circuit including an operating element, means for operating said operating element in response to current-flow through the electric circuit, means controlled by said operating element for opening said electric circuit, reset regulating means for regulating only the reclosing of said electric circuit, and means for varying said regulating means in response to ambient temperatures.

2,374,972. REFRIGERATING SYSTEM FOR MOBILE VEHICLES. Alfred Morgan Biehl, New York, N. Y., assignor to Railway Refrigeration Corp., New York, N. Y., a corporation of New York. Application May 18, 1944, Serial No. 536,098. 2 Claims. (Cl. 62—5.)



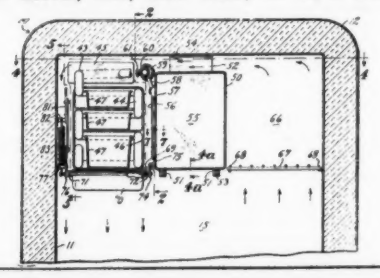
2. In combination, a mobile vehicle having a storage space therein, a vaporizing expansion cooling coil disposed within the vehicle and adapted to cool contents in said space; a storage pressure tank and an absorption tank mounted on the vehicle exterior of the space and below the floor of said vehicle; conduit means connecting one end of the cooling coil to the pressure tank and provided with a thermostatically controlled regulating expansion valve between the coil and pressure tank; conduit means connecting the other end of the cooling coil to the absorption tank; and a suction pressure control valve in the last mentioned conduit means and intermediate of the coil and absorption tank for maintaining substantially constant pressure in the cooling coil.

2,374,997. ICE MAKING APPARATUS. George S. Hill, North East, Pa., assignor to General Electric Co., a corporation of New York. Application April 27, 1943, Serial No. 484,726. 9 Claims. (Cl. 62—2.)



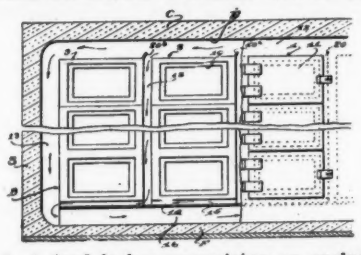
7. An apparatus for making blocks of ice or similar material comprising a cell having heat conducting side walls, means for maintaining in communication with said cell a constant supply of liquid at a level to fill said cell, means for cooling the heat conducting walls of said cell to freeze the portion of said liquid supply adjacent said walls, means for preventing the freezing of said supply of liquid at the bottom of said cell, and means for pushing the frozen block upwardly out of said cell, whereby said cell is refilled from said supply.

2,375,359. REFRIGERATION. William T. Hedlund, New Rochelle, N. Y., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application June 15, 1940, Serial No. 340,674. 5 Claims. (Cl. 62—99.)



1. In a refrigerator having a general insulated storage space, a primary evaporator in the upper part of said storage space, a self-contained high humidity chamber of relatively low temperature in said space alongside said primary evaporator, said chamber having a metal wall, a second evaporator partly formed by said wall, a condenser in heat exchange relation with the first-mentioned evaporator, and a connection between said second evaporator and said condenser.

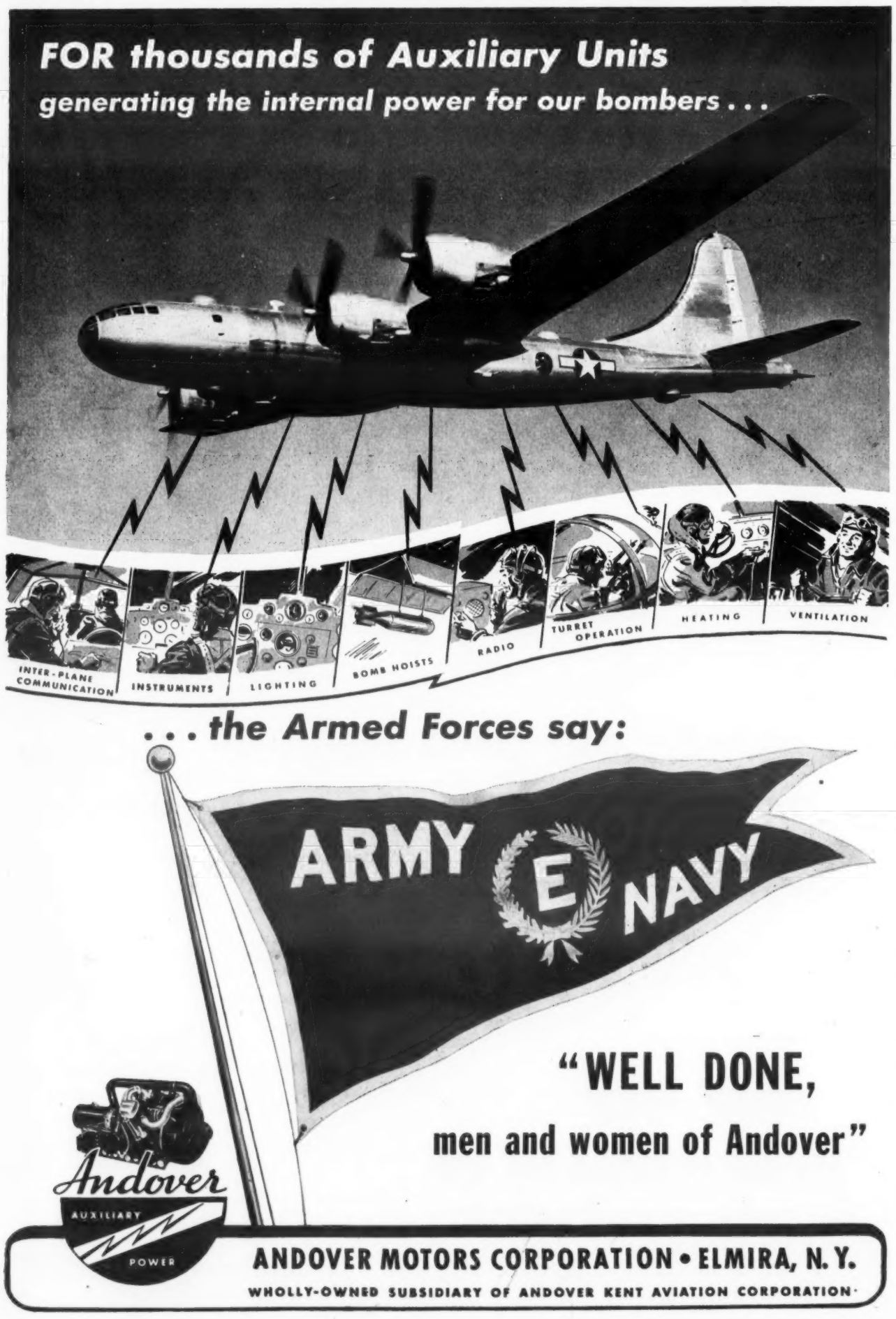
2,375,688. REFRIGERATED FOOD LOCKER ROOM. George B. Quatman, Lima, Ohio. Application Dec. 22, 1943, Serial No. 515,202. 6 Claims. (Cl. 62—102.)



1. A food locker comprising an enclosed room, a compartment within and forming a part of said room and insulated therefrom, a plurality of banks of food lockers within said compartment spaced from each other, the lockers of each bank opening directly into the room through said front, an insulated door individual to each locker for closing the front thereof and the same being accessible from within said room thereby to enable a patron to gain access to a locker from the room and without being subjected to the temperature of the compartment, means for introducing cooled air at one end of said compartment, and a return duct for withdrawing air from said compartment, said return duct being disposed at the bottom end of the compartment beneath said banks and communicating with the inside thereof at a remote point from said air inlet.

2,375,635. DOMESTIC APPLIANCE. John B. Dyer, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a

(Concluded on next page, Col. 1)



CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $2.50 per insertion. Limit 50 words.
RATES for all other classifications $5.00 per insertion. Limit 50 words.
Advertisements set in usual classified style. Box addresses count as five words, other addresses by actual word count.
PAYMENT in advance is required for advertising in this column.

POSITIONS AVAILABLE

DRAFTSMAN and engineer for heating, ventilation, and air conditioning. KROESCHELL ENGINEERING CO., 215 West Ontario St., Chicago.

OUR REFRIGERATION Service Men earn $5,000-$7,500 annually. Nationally recognized as foremost refrigeration service and installation organization in the country. Sixteen years in service business—Chicago and Detroit. Permanent positions to capable service men. Executive advancement possibilities in postwar expansion program. REFRIGERATION MAINTENANCE CORP., 321 E. Grand Ave., Chicago.

OPPORTUNITY of a life time for an experienced man to establish and manage a refrigeration and air conditioning supplies department in Texas for a large, well known company. Write full details of your background, giving seven references in the industry. Box 1704, Air Conditioning & Refrigeration News.

EXPERIENCED refrigeration cabinet design engineer. War work at present. Excellent postwar opportunity. Box 1723, Air Conditioning & Refrigeration News.

WE REQUIRE thoroughly experienced, responsible man, engineering background, take charge sales for Midwest. Product is recognized leader in its field and is sold to manufacturers and jobbers. Age 30-38. Remuneration excess of $7,000 yearly to man who qualifies. Give complete history, including photograph. Box 1727, Air Conditioning & Refrigeration News.

OLD ESTABLISHED Connecticut concern representing outstanding nationally known industrial and commercial refrigeration, air conditioning, and oil burner manufacturers, has position open for manager of operations. Requires engineer with executive ability, sound background estimating, sales and installation, with special emphasis on refrigeration and air conditioning. Give full details, confidential. Box 1729, Air Conditioning & Refrigeration News.

EXPERIENCED refrigeration service man wanted. Must be first class mechanic. Opening is with leading Western G-E dealer. Wire details collect if interested. IDAHO FALLS ELECTRIC CO., Idaho Falls, Ida.

HAVE OPENING for service man in radio and appliances including automatic washers. Must be capable in making repairs and also supervise service department and contact dealers. If interested address Box 4429 Jacksonville, Fla. Give experience and references.

NATIONAL MANUFACTURER Commercial Refrigerators, including meat cases, frozen food cases, walk-in coolers, etc., needs three junior refrigeration engineers. Experience on drawing board and with refrigerated products essential. Excellent responsible positions available to such men if they are producers. State age, past experience in first letter TYLER FIXTURE CORP., Niles, Mich.

APPLICATION ENGINEER: Wanted by Midwestern manufacturers of heat transfer equipment. Must be familiar with technical and practical applications of refrigeration and air conditioning products. This position essential to War Effort and permanent future in postwar. Write advising full qualifications, experience, and salary expected. Box 1694, Air Conditioning & Refrigeration News.

POSITIONS WANTED

MAN with 10 years' selling experience desires connection with manufacturer to learn refrigeration and air conditioning and become specialist either sales or service. Mechanically inclined, industrious, and reliable. Married, one child. Box 1733, Air Conditioning & Refrigeration News.

BUSINESS OPPORTUNITIES

LONG ESTABLISHED contracting Commercial Refrigeration and Air Conditioning business in Los Angeles, and distributor for reputable national refrigeration manufacturer, will sell to aggressive organization. $35,000 required. Box 1714, Air Conditioning & Refrigeration News.

FRANCHISES WANTED

WISH TO establish relations with renowned manufacturers of Household refrigerators, air conditioning, and ice plants. AMERICAN REFRIGERATOR CO., P. O. Box 500, Calcutta, India.

WANTED: DISTRIBUTION for all lines of refrigeration and supplies. Have display space. Experienced service departments and well experienced sales force. GULF STATES REFRIGERATION & APPLIANCE CO., 519 Carondelet St., New Orleans, La.

SAN FRANCISCO Manufacturers Agent with salesmen covering West Coast wants more products to sell. Box 1732, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

NEW CHIEFTAN air cooled condensing units complete with low pressure controls and in original factory crates. ⅓ hp. $80.83, ½ hp. $108.87 each. Quantities of 10 or more 10% discount. AA3 priority required. All prices crated F.O.B. Kansas City, Mo. 25% with order. ARCTICAIRE REFRIGERATION CO., 3939-41 Broadway, Kansas City, Mo. Tel. Westport 9667.

DRY BEVERAGE coolers. Double duty display cases 6-feet and 8-feet long. New wall type dairy and vegetable. New milk cooler, no priority 4-can $220; 6-can $245. Frosted food cabinets, self-contained Reach-ins, Walk-ins, compressors, diffusers. JORDON REFRIGERATOR CO., 235 N. Broad St., Philadelphia 7, Pa.

FOR SALE: Isobutane refrigerant. Price small lots—$1 per pound; in lots of 100 pounds, 65 cents per pound. Freez-O, a perfect refrigerant for Frigidaire Meter-Miser—price in small lots $1.50 per pound; lots of 100 pounds $1 per pound. Send your cylinders to STANDARD REFRIGERATION CO., McKees Rocks, Pa.

ELECTRIC WATER heaters. Portable, sanitary, durable, and economical. Two sizes only. Ten and 18 gallon capacities. Automatic, adjustable thermostat. Workmanship and materials guaranteed for one year. Milk Can and Milk Bottle Wash Tanks, Sterilizers, etc. No priorities needed. Write Box 1718, Air Conditioning & Refrigeration News.

FOR SALE: Prefabricated sectional new metal walk-in storage coolers, all sizes. 10 gal. water coolers. New bottle coolers. Frosted food cabinets. Water and air cooled condensing units. Write for list and prices. EDISON COOLING CORP., 310 E. 149th St., New York, 51, N. Y.

LOCKER PLANT equipment; two 100,000 B.t.u. floor units; two 50,000 blower units; one 25 hp. "Freon"; one 10 hp. "Freon"; two 5 hp. "Freon"; meat saw; steel lockers; evaporative condensers. Distress stock, no priority, all new. TRIPP REFRIGERATION CO., 1631 Folsom St., San Francisco 3, Calif.

USED and some new double duty display cases. Vegetable cases. Dairy cases. Reach-ins—20 to 70 cu. ft. Walk-ins. beverage coolers, frosted food cabinets. Coils, blowers, compressors. Prompt shipment. Write today. GENERAL REFRIGERATOR CO., 856 North Broad St., Philadelphia, Pa.

DRY BEVERAGE coolers 15 to 32 case capacity, slanting, sliding doors, fast cooling. Also reach-ins 16 to 72-cu. ft. capacity. Remote and self-contained, pre-war construction. Compressors in sizes ¼ to 1 hp. Immediate shipments. Low prices. No priority. Write or wire ACECO, Las Vegas, Nev.

CHIEF INSPECTOR

Chief Inspector to head inspection division of nationally known household refrigerator manufacturer. Must be a graduate of an accredited engineering college with ten years experience in refrigeration or related fields. Requires thorough knowledge of machine shop technology and assembly practice. State qualifications and experience. Box No. 1734, Air Conditioning & Refrigeration News.

Refrigeration Engineer

Must have technical and practical knowledge of refrigeration and manufacturing. Plant located in Ohio. Address all applications to

Box 1712
Air Conditioning & Refrigeration News

LABORATORY PROJECT ENGINEERS

with experience in electrical or mechanical development work. Able to handle all testing of a product or specialized project. Nationally known refrigerator manufacturer with excellent present and post-war opportunities. State qualifications and experience. Box No. 1725, Air Conditioning & Refrigeration News.

DEALER FRANCHISES WANTED

"We are interested in handling a complete line of refrigeration equipment. Condensing units from ⅛ to 20 H.P., refrigerators from small apartments to large walk-ins, freezers from 5 to 24 cubic feet, and air conditioning equipment of all kinds. We are located in a large Mid-western community of approximately 700,000, and would be open to any promising propositions."

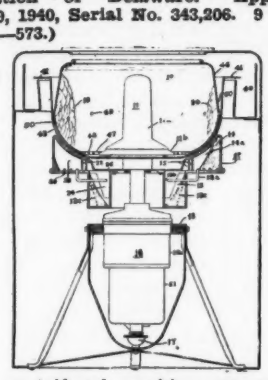
Air Conditioning & Refrigeration News, Box No. 1724

REFRIGERATION PRODUCTS
fedders
BUFFALO, N. Y.

Patents (Cont.)

(Concluded from preceding page)

poration of Delaware. Application June 29, 1940, Serial No. 343,206. 9 Claims. Cl. 74—573.)



1. A centrifugal machine comprising a rotatable device to be counter-balanced, storage means for counter-balancing liquid connected to rotate with said device, liquid pocket means distributed about the axis of rotation of said device in a position to receive liquid centrifugally from said storage means, and liquid passageway means connected to said storage means and pocket means, said passageway means extending from one side of said axis to the opposite side.

DISTRIBUTOR

of motor starting condensers in OHIO would like to represent allied products suitable to refrigeration jobbers, motor repair shops, and motor manufacturers. 13 years of established business. Financially responsible.

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MANHATTAN WHIPCORD F/HP **V-BELTS**

for satisfactory service

Important any time, but more so now, MANHATTAN Whipcord F/HP V-Belts keep home and store equipment running.

MORE POWER—grip the grooves, stop slips, uniform "pull."

LONGER LIFE—Endless cord construction resists internal heat and side wear.

SILENT RUNNING—Smooth and noiseless on high-speed drives.

THE MANHATTAN RUBBER MFG. DIVISION of Raybestos-Manhattan, Inc.
Executive Offices and Factories . . . Passaic, N. J.

FOOD MUST BE CONSERVED

Refrigeration today is performing a vital service by guarding and preserving for future use, priceless food which might otherwise be wasted. Write for literature.

GENERAL REFRIGERATION DIVISION

Kipman
AUTOMATIC REFRIGERATION

Sullivan and Geiersbach On Brunner Staff

A. SULLIVAN
Formerly with Carrier, he is now test and application engineer for Brunner.

C. GEIERSBACH
Was promoted to the post of design and development engineer.

* * *

UTICA, N. Y. — Appointment of Alfred D. Sullivan as test and application engineer and Carlton C. Geiersbach as design and development engineer of the Brunner Mfg. Co. was recently announced by S. R. Hirsch, chief engineer.

Mr. Sullivan received his B.M.E. degree from Cornell university in 1943, where he majored in heat and refrigeration engineering. Prior to completing his education at Cornell, he was a service engineer with Rothschild Bros., at Ithaca, N. Y. from 1935 to 1937, following which he owned his own service business from 1937 to 1939.

After graduation from Cornell, he became a development engineer on reciprocating compressors for the Carrier Corp. Becoming head of Carrier's testing department on reciprocating compressors in 1944, he held that position until he transferred to the Brunner organization.

Mr. Geiersbach has been with the Brunner engineering department since 1936. He studied for two and one-half years at the University of Michigan and left there in 1929 to enter industry. His engineering experience after leaving Michigan and until joining the Brunner organization was on general machine and tool design in varied industries.

New Repair Firm Set Up In Los Angeles

LOS ANGELES—Refrigeration & Electric Motor Maintenance Co. is the firm name under which George Dewey Sulzer and Frank Paul McKenzie have published a certificate that they are conducting business at 3105 Pasadena Ave., Los Angeles.

Canadian **Refrigeration Journal**

The only publication servicing the industry in Canada

National Business Publications Limited
Gardenvale, Que. - Canada

Sogaard Named Engineer With James & Roach

DETROIT — Svend Sogaard has been placed in charge of air conditioning and refrigeration engineering with James & Roach, Detroit contractor-dealer.

Since graduating from the University of Copenhagen, Denmark in 1925, Mr. Sogaard has been active in the refrigeration industry in the United States. He has engineered and installed projects where very exacting temperature and humidity control was required for such applications as fine map making and preservation of priceless records. In the field of industrial refrigeration, Mr. Sogaard has accomplished a variety of installations in connection with the electro-plating industry, and test rooms, for manufacturers of airplane parts, where temperatures are produced as low as 80° below zero. He has also directed heating, humidifying, de-humidifying, and refrigeration installations for various national and local government institutions as well as industrial and commercial concerns.

His former connections include Brunswick Kroeschell Co., York Corp., and the Wallich Ice Machine Co. He was also a partner in the Heberlee Ice Machine Co. until that firm was recently dissolved.

Another Los Angeles Firm

LOS ANGELES—Advance Refrigeration Service & Repairs is the firm name under which Pat Cucco has published a certificate that he is conducting business at 5846 Denver Ave., Los Angeles.

Bowen REFRIGERATION SUPPLIES, INC.

Atlanta Jacksonville
Tampa Charlotte

"The South's Largest Refrigeration Supply Jobber"

LA CROSSE COOLING EQUIPMENT

Manufacturers of COMMERCIAL REFRIGERATION

Look for the LACROSSE emblem for Assurance of Quality and Performance.

Walk-In, Beer Dispensing and Beverage Coolers

BLUE RIBBON FARM MILK COOLERS

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La Crosse, Wisconsin

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WRITE SHERER-GILLETT CO. MARSHALL, MICHIGAN

CHICAGO SHAFT SEALS

Acknowledged as the industry's most effective seal for replacement (even on scored or bent shafts) because it has the self-adjusting sleevelock. Quickly installed. For REAL SATISFACTION never accept a substitute. At all jobbers.

Chicago Seals are best for Coldspot. • Only Chicago Valve Plates have replaceable valve seats.

CHICAGO SEAL CO.
20 NORTH WACKER DRIVE, CHICAGO 6, ILL.

The Cream of the Crop...

IN THE January issue of this publication, Sunroc Refrigeration Company announced that it was going after national distribution for the first time in its history.

After only four months of effort on the part of Sunroc's Sales Department, the coast-to-coast Sunroc distributor-network has just about been completed. Picked men, every one . . . these distributors are outstanding for ability, experience, initiative, and integrity in their communities . . . the finest names in the business.

Sunroc . . . still busy on Army, Navy, and Maritime contracts in its ninth consecutive year as sole supplier of electric water coolers to the United States Government from the General Schedule of Supplies . . . is already producing substantially for essential civilian use. Full scale civilian production of America's finest water coolers will be swiftly achieved, as the war ends. With national distribution an accomplished fact, Sunroc will go to town . . . and quickly.

Some of our more recently appointed distributors have not closed their full quota of dealers. A few choice Sunroc dealer-franchises remain to be allocated. If you have the necessary qualifications, and are interested in forging to the front with the Sunroc organization . . . act now. Write to Sunroc Refrigeration Company, Glen Riddle, Pa., and we will put you in touch with your nearest Sunroc distributor for full particulars concerning available territory.

"There's nothing like a cool drink of water"

SUNROC *Water Coolers*

GLEN RIDDLE, PA.

SUNROC REFRIGERATION COMPANY
Glen Riddle, Pa.
Gentlemen:
Please send full particulars on the Sunroc Water Cooler franchise, and your story of "One Product, One Price, One Policy."
Name
Street
City and State
I am now / am not a water cooler dealer / distributor
ACRN-6

Commercial--

(Concluded from Page 1, Column 3)
cial refrigerator products, such as frozen food cabinets, beverage coolers, vegetable refrigerators, etc. Manufacturers emphasize, however, that all material requirements must still be provided for through the CMP procedure, and steel, copper, lumber, and other materials are still tight.

They point out that WPB obviously cannot give authorized ratings to all applications that are being made by manufacturers who wish to turn out this type of equipment. They do believe, however, that insofar as materials are available, WPB will give precedence to the industry's requirements for materials to produce the more essentially needed kinds of refrigerated food storage equipment.

In view of this situation, manufacturers say they intend to confine their efforts to the continued production of the more essential types of food storage equipment as used in retail food stores, war plant cafeterias, hotels, restaurants, and institutions.

Water Heaters--

(Concluded from Page 1, Column 3)
the number of non-electric heaters produced through the establishment of a percentage quota of base period (1941) production. Each manufacturer was limited to his calendar-quarter production to 25% of his yearly quota.

Electric water heaters were produced under the order by direct authorization from WPB to individual manufacturers, for specific quantities.

Freezing Processing On WPB Urgency List

WASHINGTON, D. C. — Freezing, canning, dehydration, and brining of fresh vegetables and fruits have been put on the National Production Urgency List, WPB reported last week.

Commercial food storage facilities are included, but not food lockers.

Placed in Urgency Band Three, the food processors are assured of manpower assistance equal to that given the producers of the most urgent war weapons.

The step reflects in part the increased requirements of food for the Pacific phase of the war. Instead of a let-up in military food needs some will be needed in greater amounts.

Less foods of the dehydrated variety will be sent to Pacific theaters of war because of the effect of humidity in the tropics. Moisture makes the dehydrated foods harder to handle, according to the War Food Administration.

'Reefers' To Be Built For Merchant Marine

WASHINGTON, D. C.—Invitations to bid on the construction of three refrigerated cargo vessels were announced last week by the United States Maritime Commission's office here.

The "reefers," 450 feet in length, are to be constructed for the United Fruit Steamship Corp. Invitation to bid is extended on behalf of the steamship operator by the Maritime Commission, in accordance with provisions of the Merchant Marine Act, 1936, as amended.

Bidding is limited to American citzens and the construction must be within the continental limits of the United States. Contractors may bid on one, two, or three vessels, it was stated.

Bids will be received by the Secretary, Maritime Commission, until 12 o'clock noon, EWT, June 18, 1945, and the Commission reserves the right to disapprove, and the right is reserved on behalf of the United Fruit Steamship Corp. to reject, any and all bids.

Invitations to bid and details on the bidding may be obtained by writing U. S. Maritime Commission, Washington 25, D. C.

'Z' Order Restrictions Revoked by WPB

WASHINGTON, D. C.—Direction 58, 60, and 65 to Controlled Materials Plan Regulation 1, which require producers to give notice to WPB of their intention to schedul "Z" (deferred) orders on brass copper wire, and aluminum so that this capacity could be used, if possible, for additional production urgently needed items, have been revoked, because of easing of the supply situation, announces WPB.

Direction 58 required that at least five days before scheduling for production of any order identified by the symbol "Z-1," a brass mill had give notice to WPB of its intent schedule such an order.

Write for Catalog 52

Automatic Pressure, Temperature and Flow Controls

GENERAL CONTROLS

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—the label that is your guarantee of maximum performance and satisfaction. Your jobber stocks it—for refilling and in factory charged dryers.

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3 Commercial & Industrial Refrigeration
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Employed by R-12

Bush C.P.C. BLOWERS

A compact, efficient unit for reach-in boxes that provides maximum cooling efficiency in minimum space. Uniform air distribution is achieved through two blasts of cold air which are discharged against the ceiling. No direct blast on product. Two specially designed finned sections give ample cooling surface.

Ideally engineered to provide proper humidity and equipped with Heat Exchanger for added efficiency. Easily installed and serviced. Oil tubes on outside of case make motor lubrication easy.

Bush engineering "know-how" and careful, thorough testing and research coupled with the highest standards of workmanship and materials have established an enviable reputation in the manufacture of dependable, high quality units . . . built to last. It is your assurance of the best commercial cooling unit value on the market.

Write for new Bush Catalog which illustrates and describes the C.P.C. Blower . . . and other Bush Heat Transfer Products. For advanced engineering . . . . Buy Bush.

Heat Transfer Products by BUSH

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